Lower Bear Creek Habitat Enhancement

Initial Study/Mitigated Negative Declaration

Humboldt County Department of Public Works
October 2022

Prepared for:

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Project Title	Mattole Lower Bear Creek Habitat Enhancement
Lead Agency	County of Humboldt; Department of Public Works
Lead Agency Contact	Andrew Bundschuh Environmental Permitting and Compliance Manager Natural Resources Division, Humboldt County Public Works (707) 445-7741 abundschuh@co.humboldt.ca.us
Applicant	Mattole Salmon Group
Applicant Contact	Emma Held Biologist Mattole Salmon Group (805) 550-5366 emma@mattolesalmon.org
Project Location	Lighthouse Road near the town of Petrolia, Humboldt County
Current Zoning	Vacant, Rural Residential, Not Zoned

1.1 CEQA Requirements

The Project is subject to the requirements of the California Environmental Quality Act (CEQA). The Lead Agency is the County of Humboldt (County), per CEQA Guidelines Section 21067. The purpose of this Initial Study/Mitigated Negative Declaration (ISMND) is to provide a basis for determining whether to prepare an Environmental Impact Report (EIR). This ISMND is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid potentially significant adverse impacts (CEQA Section 20180[c][2] and State CEQA Guidelines Section 15070[b][2]).

Section 15063(d) of the State CEQA Guidelines states that an IS shall contain the following information in brief form:

- A description of the project including the project location,
- Identification of the environmental setting,

- Identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to provide evidence to support the entries,
- Discussion of means to mitigate significant effects identified,
- Examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls, and
- The name of the person or persons who prepared and/or participated in the Initial Study/Mitigated Negative Declaration.

1.2 Project Purpose and Need

Bear Creek is a small (<1 sq mile drainage area) tributary flowing into the Mattole River just upstream of the Mattole estuary. It drains forested north-facing hillslopes and exits a steep inner gorge onto the historical floodplain of the Mattole River 500' south of the current location of Lighthouse Road. Historically, the route of Bear Creek and the Mattole River across the river's floodplain changed with winter storm flows. This process of channel migration created a mosaic of side channels and wetlands, and is thought to have provided high-quality rearing habitat for juvenile salmon and steelhead in these channels and at the upper limit of tidal influence in the Mattole estuary. With the establishment of Lighthouse Road as a year-round thoroughfare this channel migration ceased. In the 1970s a straight channel was excavated from where Bear Creek leaves the canyon straight north to a culvert under Lighthouse Road. In the subsequent decades multiple landowners and the County used heavy equipment to keep Bear Creek flowing in this channel, which offered little habitat for salmon and steelhead, and was typically connected to the river only in high flow events. With greater scrutiny from regulatory agencies in the past several decades this channel clearance ceased, and the excavated channel and culvert gradually filled in with sediment, with increasing amounts of stormflow from Bear Creek spilling out of the channel and flowing both east and west.

In the spring of 2019, a large flow event completely filled this excavated channel and this deposition pushed the main course of Bear Creek to the east, where most of the flow sinks into the forested floodplain. Only during winter stormflows is there a surface flow connection to the river, in multiple locations over Lighthouse Road. The current configuration of Bear Creek has little benefit for native fish and amphibians, and also results in frequent flooding of Lighthouse Road that impedes vehicle passage and threatens to erode and gully the road surface.

The Lower Bear Creek Habitat Enhancement Project will increase off-channel habitat for juvenile salmonids in the Mattole River estuary and improve public safety and access along Lighthouse Road in Petrolia, CA. The Project proposes rerouting flow from Lower Bear Creek (LBC) along its historic channel path and through a new culvert underneath Lighthouse Road (LHR) to ultimately flow into the Dogleg Pool at the upstream most extent of the Mattole River estuary. As a result, the Project will address several key issues regarding salmonid productivity and survival in the lower Mattole watershed including the creation of valuable off-channel habitat for salmonids, raising of groundwater levels which will result in increased cool water flowing into the Mattole slough. Additionally, the Project will drastically increase the safety and longevity of Lighthouse Road as a thoroughfare for residents.

Project Goals:

- Enhance off-channel habitat for over-wintering salmonids in the upper ecotone of the Mattole River Estuary.
- Improve public safety and access along LHR in the vicinity of LBC

Project Objectives:

- Deliver surface and subsurface flows from LBC into the Middle Slough to improve water quality in the slough and fish access to Dogleg Pool.
- Minimize delivery of sediment to Middle Slough from LBC and western tributaries.
- Reduce frequency of flooding on LHR and private driveway.
- Reduce need for County maintenance
- Minimize maintenance obligations for landowners
- Install road-stream crossings sized adequately for anticipated flows, sediment and debris delivered from upstream
- Create off channel habitat for salmonids and other aquatic species

1.3 Project Location

The project is located in a remote area of Humboldt County on Lighthouse Road approximately 2 miles southwest of Petrolia (see Figure 1 – Project Vicinity and Figure 2 – Project Overview) near the northern entrance to the Kings Range National Conservation Area at Mattole Beach. The project will be constructed on private property, the County right of way for Lighthouse Road, and property owned by the U.S. Bureau of Land Management.

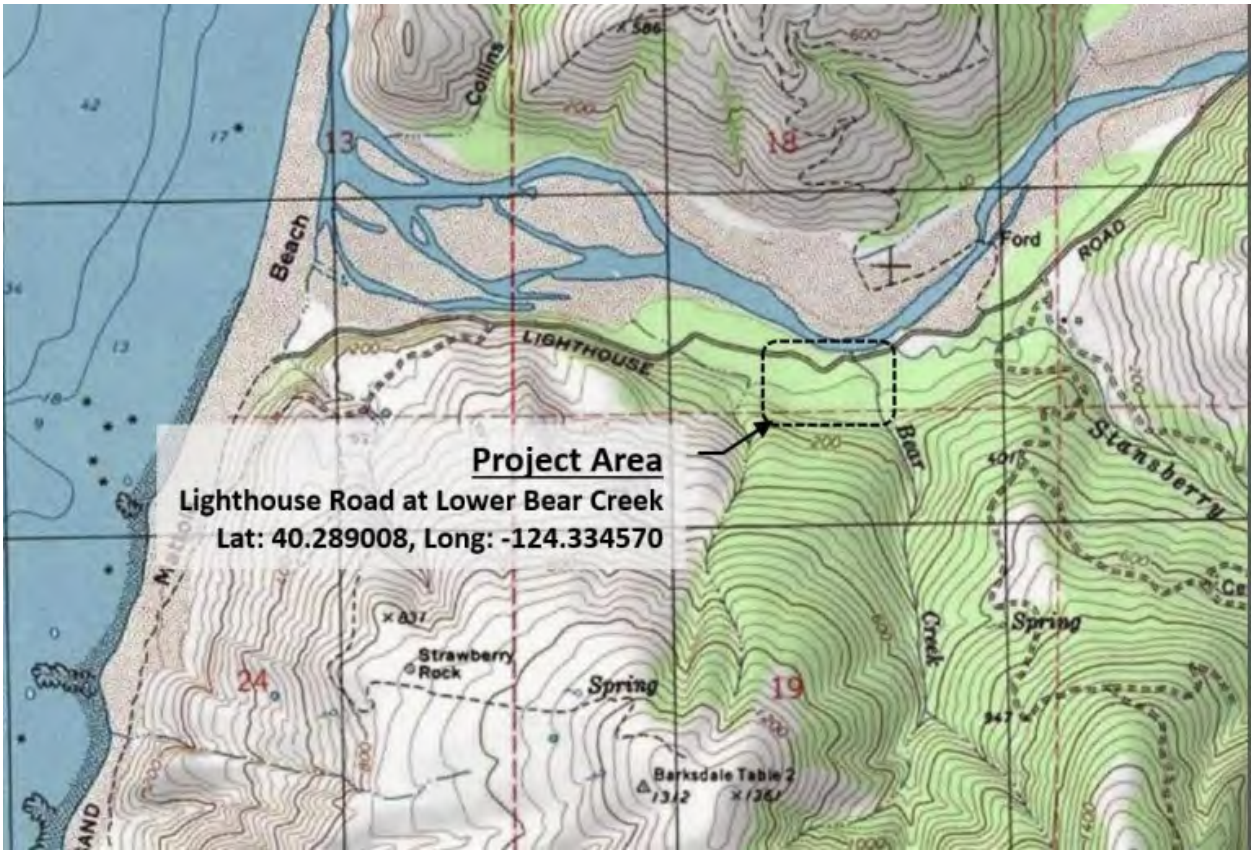

Figure 1. Overview map of Lower Mattole River and Lower Bear Creek watershed. (USGS Quad, Petrolia, CA).

1.4 Project Description

The Project will realign approximately 2,000 feet of Lower Bear Creek (LBC) from its present alignment towards the west, raise Lighthouse Road (LHR) and an existing private drive 2-5 feet, install a culvert crossing on LHR, realign a portion of a private drive and install a bridge crossing on the private drive. The Project will also excavate a sediment capture channel running parallel to LHR and place a minimum of 27 pieces of large wood in the new channel for low-velocity freshwater habitat creation. Design development and specifics can be found in Section 5 of Appendix D - Basis of Design Report (BOD).

1.4.1 Channel Design

The channel excavation consists of four sections: delivery reach, upper depositional reach, lower depositional reach and slough channel reach. The delivery reach would extend downstream from the existing channel approximately 345 feet, ending where the existing fan has a natural slope break. The delivery channel would be steep and confined to convey coarse sediment downstream of the new driveway bridge. The upper depositional reach would continue from there for approximately 380 feet, ending close to the distal end of the existing alluvial fan. From here, the lower depositional reach would extend downstream for approximately 470 feet and is expected to aggrade with fine and medium grain sands. The project's downstream-most reach is the slough channel reach that extends approximately 860 feet, crosses under LHR and is rerouted into an old channel scar and then into the head of the existing Dogleg Pool. The downstream 500 feet of this reach will be within residual backwater of the Dogleg Pool, providing low velocity slough habitat. An additional capture channel and a series of small alcoves will be excavated alongside the realigned LBC channel as a means to collect bank overflow and reroute it back to the channel before crossing under the road. See Appendix A, Figure 2 – Project Overview.

1.4.2 Large Wood Placement

The total length of low-sloped reaches downstream of the delivery channel is 1,680 feet. A minimum of 27 pieces of large wood (minimum 12 inches in diameter and minimum 25 feet in length) will be placed in the lower reaches of the project. Wood will be stabilized by weaving and wedging logs between existing trees, burying logs into the bank and anchoring with through-bolts when necessary.

1.4.3 Stream Crossings

Lighthouse Road Stream Crossing

An open bottom arch culvert with mitered ends set on concrete footings with a concrete apron spanning the footings was selected for the crossing on Lighthouse Road. Specific culvert parameters and design can be found in Appendix A, Figure 3 – Culvert Design.

Private Driveway Bridge

The selected crossing is a single span 60-foot long, 16-foot-wide voided concrete slab bridge placed on concrete footings. The concrete slab consists of four separate girder modules that are 4 feet wide and 26 inches deep. The concrete slab doubles as the driving surface. Driveway bridge design can be found in Appendix A, Figure 4 – Bridge Design.

1.4.4 Road Construction

Lighthouse Road

The Project proposes to raise Lighthouse Road from 1.5 to 5 feet for a length of 1,500 feet along its current alignment. The roadway section will be 25 feet wide with 2:1 embankment side slope. An estimated 6,400 cubic

yards of materials is needed to raise LHR to the design elevation. This material is expected to be generated on-site from the channel construction.

Private Driveway

The private drive on APN 104-031-132 will be realigned and raised. The driveway would be relocated approximately 130 feet east of its current location to an existing second driveway on the property. The total length of the raised and realigned driveway is 1,000 feet. The current driveway that parallels LBC would be abandoned for a length of approximately 300 feet. The driveway will be raised 2 to 2.5 feet to match the LHR elevation, and as much as 11 feet to meet the elevation of the new bridge crossing. An estimated 7,125 cubic yards of material is needed to raise the private drive to design elevation. This material is expected to be generated on-site from the channel construction.

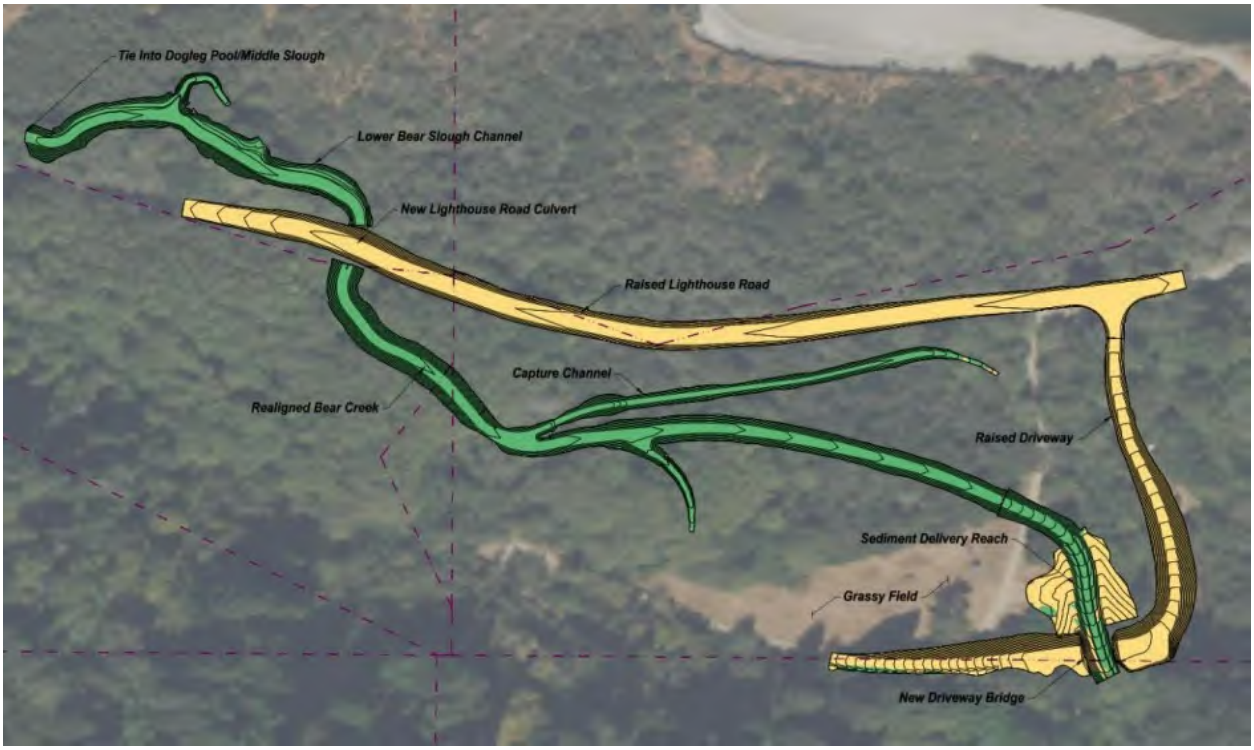

Figure 2. Lower Bear Creek proposed project design. Green indicates channel excavation, yellow indicates road embankment fill. Copntours represent 1-foot elevations. Approximate parcel likes are shown as dashed lines. Figure from 65% Design Plans, MLA, 2022.

1.5 Project Construction

1.5.1 Construction Schedule

Construction of the Lower Bear Creek Habitat Enhancement Project is expected to commence no earlier than summer of 2024 and last for no more than two construction seasons. Vegetation removal would be confined to before February 1 or after August 31 to avoid the sensitive bird species nesting window, when possible. If vegetation clearing cannot be confined to this window, a qualified ornithologist would conduct nesting surveys and flag a buffer around these nests. The proposed instream construction season is June 15 – October 31 during a time when streamflow in LBC is either non-existent or at its lowest and surrounding soils are not saturated. Fish are not currently present in Lower Bear Creek and thus no fish relocation activities are anticipated. Construction activities will include channel excavation, road construction and grading with the use of heavy machinery. Heavy machinery

will be operated from access roads and not in saturated areas, though some areas may require temporarily diverting water. All construction activities will utilize erosion and sediment control BMPs.

1.5.2 Construction Activities and Equipment

To the extent possible material from channel excavation and culvert crossing will be used to rebuild the roadbed, and any trees removed for access or excavation will be stockpiled and utilized for in-channel habitat. Any trees with a diameter larger than 18 inches will be tipped or excavated with their roots intact. The majority of trees harvested from the project area will be alder and the project may need to supplement with locally sourced fir or pine to meet the criteria for in-channel habitat structures and increase longevity of the structures. The Mattole Restoration Council has identified that fir trees will be available for use at Lower Bear Creek from a meadow restoration project they are performing nearby. Excess soils, aggregate road base, and construction materials will be stored withing designated staging areas. All excess materials will be removed from the site once the project is complete. The contractor will haul excess materials off site for beneficial reuse, recycling or legal disposal. An adjacent landowner has requested all excess excavated material from the project for beneficial reuse.

Construction would primarily include site preparation such as removal of vegetation, followed by excavation, grading, and hauling. Water from legal sources would be used for dust control and compaction and re-vegetation.

All construction activities would be accompanied by both temporary and permanent erosion and sediment control BMPs. Project construction would include the following activities:

- Clearing and grubbing – To clear vegetation and brush from new slough channel, private driveway and Lighthouse Road shoulders (if/as needed) and to construct project features,
- Grading – Throughout the project area,
- Excavation – Throughout the new stream channel and alcoves, at culvert installation, at bridge foundation and other areas per the design plans,
- Tree, rock, and structure placement – Installation of trees and rock within the stream channel, installation of culvert, bridge, per design plans,
- Road surfacing – Along Lighthouse Road and private driveway, and
- Hauling – Transport of rock, road base if needed, bridge and culvert materials to site, and transport of excess materials from site after construction.

Equipment required for construction would include tracked excavators, backhoes, graders, bulldozers, dump trucks, water trucks, skid steers, and pick-up trucks. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for construction.

Construction Access

The project would be accessed via Lighthouse Road from Honeydew or Petrolia. No new access roads would need to be constructed to implement the project.

Establish Exclusion Areas and Erosion Control

Prior to construction, any exclusion areas to protect delineated wetlands or Sensitive Natural Communities would be installed by the contractor pursuant the final construction design plans. To minimize erosion, sediment, and pollutant contribution to the Mattole River, BMPs would be instituted, including:

- Construction would occur in summer when the chance of precipitation is lowest and Mattole River instream flows are at their annual minimum.

- Construction equipment would be cleaned and inspected prior to use. Equipment maintenance and fueling would be done at designated staging areas and away from the Mattole River or any delineated wetlands. Equipment would not enter the wetted environment of the Mattole River.
- On-site stockpiles would be isolated with silt fence, filter fabric, and/or straw bales/fiber rolls.
- Silt fence or fiber rolls would be placed below the project areas to contain loose rolling rocks and sediment. Silt fence/fiber rolls would be kept in place and maintained during the entire project. Any sediment caught by the fence or rolls would be removed before the fence/rolls are pulled.
- Ground disturbed by construction work would be revegetated with fast-growing native grasses and sterile hybrids and mulched when work is complete.
- The site would be monitored during winter rains and any evidence of erosion (rilling, gullies, etc.) would be repaired immediately. In addition, areas where revegetation is not successful would be reseeded and remulched to ensure vegetative ground cover.

Vegetation Removal

Vegetation removal would be limited to minor roadside vegetation in the areas where Lighthouse Road would be installed, within and immediately adjacent to the private driveway and bridge location, in the location of the new Lighthouse Road culvert, as needed in the new Lower Bear Creek stream channel, and in limited areas for construction access. Vegetation removal would include minor mowing, minor brush removal and limited tree removal.

To minimize potential impacts to birds, vegetation could be removed prior to February 1 or after August 31 to avoid the nesting bird season. If vegetation removal or ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist would conduct pre-construction surveys within the vicinity of the project area, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special-status bird species. If active nests were detected within the construction footprint or within the construction buffer established by the Project biologist, the biologist would flag a buffer around each nest.

Stockpiling and Staging

Temporary disturbance for stockpiling and staging would occur within the limits of temporary disturbance at the project site off of Lighthouse Road. Within the stockpiling and staging area, BMPs would be utilized to prevent materials and hazardous materials from impacting the environment.

Existing Utilities

Overhead telephone and high voltage electrical lines bisect the project area. The overhead clearance is sufficient to accommodate construction under the lines without needing temporary or permanent relocation.

1.5.3 Traffic and Access Control

One-way traffic control on Lighthouse Road will be necessary during the culvert crossing installation and during raising and surfacing of Lighthouse Road. Short closures (less than 1 hour) may be needed during material delivery or installation or during some road construction periods. Residents of Lighthouse Road and Prosper Ridge and the U.S. Bureau of Land Management will be informed of construction dates when traffic control on Lighthouse Road is expected.

1.5.4 Groundwater Dewatering

Groundwater dewatering is generally not expected to be required. However, if needed, temporary groundwater dewatering would involve pumping water out of a trench or excavation. Groundwater would typically be pumped to a settling pond, Baker tanks (or other similar type of settling tank), or into a dewatering bag. Dewatering water may also be percolated back into the ground (in uplands) or used for dust control and compaction, or re-vegetation irrigation. Discharge to the Mattole River would not occur.

1.5.5 Site Restoration and Closure

Following construction, the contractor would demobilize and remove equipment, supplies, and construction wastes. The disturbed project areas would be restored to pre-construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, and native plantings/revegetation.

1.6 Operations and Maintenance

The bridge and the newly constructed driveway on APN 104-031-132 will be maintained by the landowner. The culvert crossing and Lighthouse Road will be maintained by the Humboldt County Department of Public Works. This includes monitoring and maintenance of culvert, roadside ditches and potholes.

1.7 Other Requirements and Considerations

1.7.1 Environmental Protection Action 1 – Stormwater Pollution Prevention Plan (SWPPP)

The Project will obtain coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The County will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling, and analysis, and ensuring overall compliance.

1.7.2 Required Regulatory Permits

The Project will require a permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, a Water Quality Certification from the North Coast Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act, a Coastal Development Permit from the California Coastal Commission (CCC), a Streambed Alteration Agreement from the CA Department of Fish and Wildlife (CDFW) a Section 7 consultation and biological opinion from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) as well as grading and encroachment permits from the County.

Table 1.7-1 Permitting Summary

ESA Section 7 with USFWS and NMFS	Concurrence Letters or Biological Opinions
National Historic Preservation Act (NHPA) Section 106	Concurrence from the SHPO
California Dept. of Fish and Wildlife	Section 1602 Streambed Alteration Agreement and California Endangered Species Act (CESA) Compliance
USACE	CWA Section 404 Permit
RWQCB	CWA Section 401 Water Quality Certification
RWQCB	SWPPP or Water Pollution Control Plan

1.7.3 Mitigation, Monitoring and Reporting Program

A Mitigation, Monitoring and Reporting Program (MMRP) has been prepared for this Initial Study/Mitigated Negative Declaration (ISMND) and includes a summary of all mitigation measures, the respective phase, the respective enforcement agency and a checklist to verify completion. The MMRP for the Project can be found in Appendix B.

1.7.4 Tribal Consultation

The Bear River Band of the Rohnerville Rancheria owns one of the private parcels (APN 104-031-132) where most of the construction is planned to occur. The Bear River Band, including a member of the Tribal Council, have reviewed the project design and are in support of the project. A Cultural Resources Investigation was also completed in coordination with Bear River Band. Additionally, the County provided AB 52 notification letters to representatives of the Bear River Rancheria, Sinkyone Intertribal Wilderness Council, and the Wiyot Tribe on October 20, 2022. No responses have been received to date (more than 30 days).

2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages:

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Agricultural & Forestry Resources	☒Hazards & Hazardous Materials	☐ Recreation
☒Air Quality	☒Hydrology/Water Quality	☐ Transportation
☒Energy	☐ Land Use/Planning	☐ Tribal Cultural Resources
☒Biological Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☒Cultural Resources	☐ Noise	☒Wildfire
☒Geology/Soils	☐ Population/Housing	☒Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

X I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☐ I find that the proposed MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

November 30, 2022

Andrew Bundschuh, Environmental Permitting and Compliance Manager — Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

The Project will occur on Lighthouse Road (LHR), a County-maintained thoroughfare that is used by visitors to the Mattole Beach and by residents of LHR and Prosper Ridge, as well as on privately owned land just south of LHR that is not visible from the road. To the north of LHR is the Mattole River and the Mattole Middle Slough - a 1,500 foot excavated alcove that supports dense riparian forest vegetation.

a) Substantial adverse effect on scenic vista?

No Impact: The Project will not have a significant adverse effect on a scenic vista, though the Project site is located near a scenic area. As defined by the Humboldt County General Plan (Section 10.7.2) a scenic vista includes forested hillsides, working agricultural land, river corridors and the coast. Lighthouse Road is not designated as a scenic road (nor is it under consideration for official designation), and the Mattole River is not part of California's Wild and Scenic Rivers, however, the Project area is located near a scenic resource.

In its current state, Lighthouse Road where Lower Bear Creek floods onto the road is riddled with potholes, and a small section of the north side of the road is eroding into the mainstem Mattole River. The construction associated with this Project will drastically improve the functionality and the appearance of Lighthouse Road and will not impair scenic vistas along Lighthouse Road or within any private holdings. The Project will restore Lower Bear Creek to a more natural condition, and improve the scenic vista by supporting natural vegetation communities, and decreasing erosion and sediment runoff from Lighthouse Road.

b) Substantial damage to scenic resources?

No Impact: Lighthouse Road and the private drive are not designated or eligible as a scenic highway or byway according to the California Scenic Highway Mapping System, nor is the Mattole River classified as Wild and Scenic. There are no historic buildings, structures or rock outcroppings within the vicinity of the Project. Approximately 14 riparian trees with a DBH greater than 6 inches will be removed by Project

construction and will be stockpiled for use in creation of instream habitat.

c) Substantially degrade the existing visual character or quality of public view?

Less Than Significant Impact: The Project will not substantially degrade the existing visual character or quality of public views of the site and its surroundings. On the contrary, the proposed actions will improve the visual quality of existing Lighthouse Road and surrounding habitat. Landowners and the public may experience some degraded visual character during Project construction. However, through careful planning and design, the natural character of the site will be maintained to the greatest extent practical while still achieving the Project objectives. The Project will blend in with natural topographic features in addition to revegetating sites where vegetation has been removed or fill has been placed with native trees, shrubs and other vegetation.

d) Create a new source of substantial light?

No Impact: The Project will not create a new source of substantial light which would adversely affect day or nighttime views in the area of the worksites. Such an impact will not occur because the Project will not require nighttime construction, the installation of artificial lighting, nor are there any Project elements that would contribute a substantial glare.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance?

No Impact: The Farmland Mapping and Monitoring Program has not mapped farmlands in Humboldt County. Utilizing soil data from the Natural Resources Conservation Service (NRCS), Humboldt County

WebGIS has designated the Project area as "Not Prime Farmland". The proposed actions take place on an existing County road, an existing private driveway and within the Mattole River riparian corridor. The Project footprint will only enhance current land use objectives and will not convert any area to non-agricultural use, thus there will be no impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact: The site is currently zoned as Vacant, Rural Residential and Not Zoned. None of the parcels within the Project area are under a Williamson Act (WA) contract and the proposed Project would not interfere with the ability to place the parcel into a WA contract or preserve because the Project does not involve any land conversion. Thus, there would be no impact.

c) Conflict with Forest Land Zoning or Convert Forest Land?

No Impact: The site is zoned as Vacant, Rural Residential and Not Zoned and as such will not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timber zoned Timberland Production.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact: The Project proposes to remove approximately 14 riparian trees (primarily alder) within the Project footprint for access and construction purposes. The number of trees removed will be minimal and will only come from the riparian area. These trees are not considered forest land resources and their removal from an area not designated as Forest Land indicates there will be no impact.

e) Convert Farmland to non-agricultural use or convert Forest land to non-forest use?

No Impact: The Project will not involve other changes in the existing environment, which due to their location or nature, could result in significant conversion of farmland to non-agricultural use. The site is not considered important farmland or forest land. Fisheries habitat restoration actions either are away from, or are compatible with, existing agricultural and forest land uses.

3.3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?				X

The Project is located within the North Coast Unified Air Quality Management District (NCUAQMD) which has put forth rules and regulations intended to achieve, maintain and protect health-based State and Federal Ambient Air Quality Standards (AAQS) and prevent deterioration of levels of air quality in the California North Coast Air Basin. The NCUAQMD has indicated that construction emissions are not considered regionally significant for projects that will be of relatively short duration (less than one year) (NCUAQMD 2015). Project construction in this case is expected to last approximately 240 days over two construction seasons (June 15 – October 31). Emissions related to construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 and are discussed below (see Appendix C – CalEEMod Modeling Information and Results).

a) Conflict with implementation of air quality plan?

Less than Significant Impact with Mitigation: According to standards and monitoring plans developed by the North Coast Unified Air Quality Management District (NCUAQMD) Humboldt County is designated as 'in attainment' for all State and Federal AAQS pollutants except PM_{10}. PM_{10} refers to particulate matter with an aerodynamic diameter smaller than or equal to 10 microns. In Humboldt County stationary sources such as power plants and manufacturing facilities contribute significant concentrations of PM_{10}, as well as emissions from wood stoves, dust from construction and demolition, automobiles, airborne salts and biogenic emissions from plants and trees.

Impacts related to construction dust are considered significant if dust is allowed to leave the site (NCUAQMD 2015). During the construction periods, the Project will comply with NCUAQMD Rule 104 Section D, Fugitive Dust Emissions. This list of prohibitions was developed by NCUAQMD to address 'non-attainment' of PM_{10} in Humboldt County and bans the handling, transporting, or open storage of materials in such a manner which allows unnecessary amounts of particulate matter to become airborne. Rule 104 Section D lists several precautions pertinent to this Project that should be taken to prevent particulate matter from becoming airborne including covering open bodied trucks when transporting materials that could become airborne and using water to minimize dust production during construction. The construction portion of the project is anticipated to last for two construction seasons (June 15 – October 31) and activities associated with the Project - such as vehicle traffic, excavation and grading - will generate PM_{10} emissions in the Project area, therefore, Mitigation Measure AQ-1 will be incorporated to comply with NCUAQMD's Rule 104 Section D - Fugitive Dust.

Mitigation Measure AQ-1: BMPs to Reduce PM_{10}
The contractor shall implement the following BMPs during construction:

- Any surfaces with exposed soil (e.g. staging areas, access roads, graded surfaces, excavation sites) will be watered at least once per day or as needed for dust suppression.
- Construction vehicles will not exceed speeds of 15 miles per hour on unpaved roads.
- Construction vehicles will work to minimize idling times of all vehicles and machinery.

By design the Project will not involve the handling, transportation or open storage of materials which would allow particulate matter to become airborne, which is in compliance with NCUAQMD's Rule 104 Section D. Implementing Mitigation Measure **AQ-1** will reduce the potential for impacts related to PM_{10} and will not conflict with State and Federal air quality plans. The impact will be reduced to none with this mitigation in place.

b) Result in net increase of criteria pollutant?

Less than Significant: As described above in Section 3.3 Air Quality Impact (a), Humboldt County is in attainment of all air quality standards, except PM_{10}. Project activities will include various types of earthwork (e.g. excavation, grading) that could potentially contribute to criteria pollutant PM_{10}. With implementation of Mitigation Measure **AQ-1** the Project will comply with NCUAQMD's Rule 104 Section D and prohibit open bodied trucks from transporting materials that could become airborne, use water on

disturbed soil areas, maintain appropriate vehicle speeds of under 15 miles per hour on unpaved areas and minimize idle time of construction vehicles. Therefore, the project will not result in a cumulatively considerable net increase of any criteria pollutant designated 'not in attainment' by NCUAQMD in Humboldt County.

Regarding construction emissions, the NCUAQMD states that emissions are not considered regionally significant for projects where construction is expected to be of relatively short duration (less than one year). The NCUAQMD has not formally adopted significance thresholds that would apply to the proposed Project, which is expected to last approximately 240 days across two construction seasons (June 15 - October 31). However, NCUAQMD has indicated that it is appropriate to compare proposed construction emissions to stationary source significant thresholds, understanding that if a project's emissions are less than or equal to each threshold, effects are considered to be less than significant. Emissions related to Project construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0.

Table 3.3-1. Pollutant emissions comparison.

	Emissions (tons per year)			
	Reactive Organic Gases	**Nitrogen Oxides**	**Carbon Monoxide**	**PM_{10}**
Project Construction	0.02	0.19	0.36	1.58
NCUAQMD Stationary Source Thresholds	40	40	100	15
Significant Impact?	No	No	No	No

At the close of the Project, all vehicles and machinery will be removed and there will not be any stationary sources of criteria pollutants. The Project is not anticipated to increase the amount of vehicle traffic on Lighthouse Road and thus will not significantly increase any criteria pollutant concentrations as a result of completion. The Project's impact on criteria pollutant emissions is less than significant.

c) Expose sensitive receptors to pollutant concentrations?

Less than Significant: Sensitive receptors are people, or facilities that generally house people (e.g., residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks) that may experience adverse effects from unhealthful concentrations of air pollutants or odors. People who are most likely to be affected by air pollution include children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. There are no hospitals, daycare facilities, elder care facilities, elementary schools or parks within 2 miles of the Project area. There is one sensitive receptor – an occupied residential home - approximately 1,700 feet from the Project boundary.

Construction equipment and heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. DPM from equipment exhaust and $PM_{2.5}$ pose potential health impacts to nearby receptors if those receptors have prolonged exposure to substantial emissions. As required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), construction contractors would be required to minimize idling times for trucks and equipment to five minutes, as well as to ensure that construction equipment is maintained in accordance with manufacturer's specifications. Given the limited daily activity for construction (8-10 hours per day), the construction length of 120 days per year for two years, the distance from the Project area to the residence and lack of other sensitive receptors nearby, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur. The impact would be less than significant.

d) Result in other emissions?

No Impact: The Project will not create objectionable odors affecting a substantial number of people. The

Project design does not include the construction of an odorous facility or the use of odiferous machinery during construction (e.g. wastewater treatment, landfill), thus there is no impact.

3.4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Activities associated with the Project include clearing vegetation for access and staging areas, excavating a new channel, installing a bridge crossing and raising a private drive, installing a culvert crossing and raising the elevation of Lighthouse Road. There is natural habitat present within the Project area with conditions that support a wide range of species, habitats and aquatic resources.

An in-depth review of the Project site and surrounding area was conducted between 2019 and 2021, the results of which are compiled into the Lower Bear Creek Slough Enhancement Regulatory Background Report (Laird, 2022; Appendix D). This report includes determinations from a Vegetation Assessment (Kalt, 2021), a Cultural Resources Investigation (Roscoe, 2022) and a Wildlife Assessment (Slausson, 2021). The proposed project region is defined as the 9-quadrangle area centered on the Arcata north quadrangle and also includes: Cape Mendocino, Capetown, Taylor Peak, Petrolia, Buckeye Mtn., Bull Cr., Cooksie Creek, Shrubrick Peak and Honeydew.

Species addressed in these assessments include all animal and plant species legally protected pursuant to the California and Federal Endangered Species Acts (CESA and FESA, respectively) and the California Environmental Quality Act (CEQA). Database sources used include the California Natural Diversity Database (CNDDB),

California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants of California*, the Biogeographic Information Observation System (BIOS), California Department of Fish and Wildlife (CDFW) special animals list (CDFW 2019) and the northern spotted owl database (Gould 1997).

a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

Less Than Significant with Mitigation Incorporated: Impact analysis and mitigation measures for special status plants and wildlife are informed by Appendix D - the Lower Bear Creek Regulatory Background Report (Laird, 2022). The results of the associated assessments are described below.

Special Status Plant Species

Special Status plants are rare, threatened or endangered species as defined by the Federal and California Endangered Species Acts, as well as non-listed species that require consideration under 14 Cal. Code Reg. §15380. Plants on the California Rare Plant Ranking (CRPR) Lists 1A, 1B, and 2 are also considered eligible for State listing as endangered or threatened. The primary source of information on natural communities is the CDFW Vegetation Classification and Mapping Program (VegCAMP, 2021). Special Status natural communities are communities with limited distribution that may be vulnerable to environmental impacts. The Global (G) and State (S) rarity rankings for currently recognized vegetation alliances are ranked in the California Natural Community List. Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities to be addressed in the environmental review processes of CEQA and its equivalents (VegCAMP, 2021).

Protocol-level botanical surveys were conducted in the Project area on May 21, July 1 and August 5, 2020, and June 9, 2021. All plants encountered during the surveys were identified to the taxonomic level necessary to determine whether they are of special status. No Special Status plants were encountered within the Project area. . Based on surveys from a qualified botanist, there is an absence of special status plants within the Project area and therefore impacts to special status plants are considered less than significant and do not require mitigation measures.

Special Status Wildlife

Species addressed in this assessment include all animal species legally protected pursuant to the California and Federal Endangered Species Acts (CESA and FESA, respectively), California's "Fully Protected Species" statutes (California Department of Fish and Game (CDFG) codes 3503.5, 3505, 3511, 4700, 5050 and 5515), and the California Environmental Quality Act (CEQA). These assessments utilize three elements: 1) queries of state and federal agency databases for species occurrence in the biological assessment area for the proposed project 2) an assessment of current habitat conditions to support species of conservation concern in the biological assessment area for the proposed project and 3) a site visit to the existing project area to evaluate habitat conditions and detect species present during the site visit.

The Project site was evaluated for habitat conditions for terrestrial and aquatic wildlife species on four occasions from 21st of June through the 16th of August 2020. A total of 27 animal species of conservation concern were identified in the CNDDB database query; a complete list of these species is provided in the Wildlife Assessment. If present in the Project area, during construction activities, special status wildlife could be injured or killed due to vegetation clearing or excavation, resulting in a potentially significant impact. With appropriate mitigation measures in place, the impact would be reduced to less than significant.

Special Status Mammals and Bats

The Wildlife Assessment identified special status bat species that could potentially occur in the Project area: Townsend's big-eared bat (*Corynorhinus townsendii*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), fringed myotis (*Myotis thysanodes*), long-eared myotis (*Myotis evotis*), yuma myotis (*Myotis yumanensis*) and western red bat (*Lasiurus blossevillii*). Suitable habitat for the listed bats may occur in the Project area, but suitable roosting and nesting sites are not present in the Project area and therefore the listed bats are not likely to be adversely affected by Project activities.

The following special status mammal species are native to Humboldt County but have a low potential to occur in the Project area: north American porcupine (*Erethison dorsatum*), Sonoma tree vole (*Arborimus pomo*), Steller's sea lion (*Eumetopias jubatus*), Humboldt marten (*Martes caurina humboldtensis*), Pacific fisher (*Pekania pennanti pacifica*) and American badger (*Taxidea taxus*). roosting and colony sites are not present and therefore these species are not likely to be adversely affected and the impact is less than significant. The Wildlife Assessment determined that the listed special status mammals have low potential to occur because there is not suitable habitat available in the Project area and therefore these species are not likely to be adversely affected and the impact is less than significant.

Special Status Birds

No special status species were detected during protocol surveys, but the following special status species have a moderate-high potential to occur in the Project area: Cooper's hawk (*Accipiter cooperii*), Sharp-shinned hawk (*Accipiter striatus*), Red-shouldered hawk (*Buteo lineatus*), Northern saw-whet owl (*Aegolius acadicus*), Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Little willow flycatcher (*Empidonax trailii brewsteri*), Yellow-breasted chat (*Icteria virens*). The species listed above have the potential to be impacted by Project activities and thus require mitigation measures.

Mitigation Measure BIO-1: Protect Migratory, Special Status and Nesting Birds

- There will be no night work or artificial lighting in the Project area.

- Vegetation clearing shall occur outside the bird nesting season (Feb 1 to September 15). If vegetation removal occurs outside the bird nesting season, no further mitigation is necessary. If vegetation removal or construction work occur adjacent to suitable nesting habitat between February 1 and September 15, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the Project at minimum one-day pre-construction survey within the 7-day period prior to vegetation removal and ground-disturbing activities.

- If active nests are detected within the construction footprint or up to 500 feet from construction activities, the ornithologist shall flag a buffer around each nest (assuming property access). Construction activities shall avoid nest sites until the ornithologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed (buffer size dependent on species). In general, the buffer size for common species will be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds. An absolute minimum buffer size of 30 feet is recommended as a starting point of discussion for common species, with larger buffers expected for special status species and raptors.

- If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of

the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

Implementing the mitigation measures outlined in **BIO-1** will reduce the Project impact on special status birds to less than significant.

Special Status Amphibians and Reptiles

The Wildlife Assessment identified the following amphibians and reptiles of special concern with a moderate-high potential to occur in the Project area: Pacific tailed-frog (*Ascaphus truei*), Northern red-legged frog (*Rana aurora*), Foothill yellow-legged frog (*Rana boylii*) and Western pond turtle (*Emys marmorata*). The southern torrent salamander (*Rhyacotriton variegatus*) has a low potential to occur in the Project area, but may occur higher in the Lower Bear Creek basin and is unlikely to be adversely affected with mitigation measures. The Project will involve earthwork in an existing watercourse and will potentially have significant impacts on these sensitive populations, thus requiring mitigation measures.

Mitigation Measure BIO-2: Protect Special Status Amphibians and Reptiles

- By design, the Project will minimize disturbance in the wetted channel to the greatest extent possible.

- No wetted channel construction activities will occur during the wet season when they would have the potential to impact sensitive amphibians and reptiles.

- Contractors will minimize the potential for sediment runoff into Bear Creek and the Mattole River from on-site erosion by implementing BMPs related to sediment runoff. At the close of construction any disturbed areas will be revegetated with native plants and mulched.

- A maximum of 24-hours prior to the start of construction, a qualified biologist will survey any portion of the wetted channel that falls within the Project footprint prior to the start of disturbance activities to detect and relocate amphibians and reptiles of conservation concern. The biologist will move any fish or amphibians that may be in work sites to suitable habitat outside of the Project footprint. The frequency of the need to re-survey will depend on survey results, duration of disturbance activities, weather conditions post-survey that may influence amphibian movement, and the timing of foothill yellow-legged frog movements into Bear creek form the lower Mattole River.

Implementing measures outlined in **BIO-2** will reduce the Project impact on special status amphibians and reptiles to less than significant.

Special Status Fish

The Mattole River supports four fish species of special status with moderate likelihood to occur in the Project area: summer-run steelhead (*Oncorhynchus mykiss irideus;* pop. 36), Pacific lamprey

(*Entosphenus tridentatus*), steelhead (*Oncorhynchus mykiss irideus* pop.16), coho salmon (*Oncorhynchus kisutch*) and Chinook salmon (*Oncorhynchus tshawytscha*).

Bear Creek is currently not accessible to anadromous fish except during very rare extreme flow events, due to a lack of surface flow connection between the stream and the mainstem Mattole River. It is currently estimated that a Mattole River flow of at least 30,000 cfs (a ~1.5 yr recurrence flow) would be necessary to allow adult salmonids to enter the creek. No surveys of Bear Creek for juvenile salmonids have been conducted since 2009, due to the low likelihood of fish entering the stream with the current channel configuration. In May 2007 one juvenile steelhead was observed in Bear Creek upstream from Lighthouse Rd. Residents of the property through which the stream flows observed additional juvenile steelhead in a 200' reach of the stream in June and July. Prior to 2007, there are anecdotal accounts of juvenile coho and steelhead in the Bear Creek channel, and the observation of a spawning adult coho salmon in 1993.

In its current configuration, there is a maximum 600' of channel upstream of Lighthouse Rd that offers potential spawning and rearing habitat, if flows were sufficient to allow fish access. Current spawning habitat is very poor, with highly embedded, angular gravels. Rearing habitat is also poor due to a lack of pool depth, large woody cover, and the confined nature of the channel due to the stream being straightened and confined by levees multiple times between 1975 and the mid-1990s.

Dogleg Pool

This ~500' long feature is immediately north of Lighthouse Rd, west and downstream of Bear Creek. Over the last decade, during some high flow periods the Dogleg Pool is connected to the slough system downstream and the mainstem Mattole, but for most of the year the feature is an isolated pool, with maximum depths of 3-4' during the wet season, shrinking to <1' during the summer. Some surface water does remain in the Dogleg Pool throughout the summer. In the summer of 2020 Phase 3 of the Middle Slough excavation lowered the channel elevation between the Dogleg Pool and Middle Slough, again allowing for surface flow connection at Mattole River flows of ~2500 cfs.

Fish surveys have been conducted rarely in the Dogleg Pool due to the generally poor water clarity, due to algal growth and runoff from the graveled surface of Lighthouse Road, and the brief hydroperiod during which it is connected to the mainstem Mattole. During nighttime snorkel surveys in February of 2016 a 1+ steelhead parr and 50 threespine stickleback were observed. In March of 2017 no fish were observed, although visibility was poor, <1 m. On 5/2/2019 an eDNA sample taken from the Dogleg Pool showed the presence of DNA from steelhead, indicating the presence of at least a single individual in the feature.

The instream construction portion of the project will temporarily affect migration of fish between habitat units. The Project is designed to increase the amount of available spawning and rearing habitat for salmonids and will ultimately outweigh the potential impacts (sediment erosion, impeded juvenile migration between habitat units, caused by the Project. Implementing mitigation measures will reduce potentially significant impacts that may result from Project construction to less than significant.

Mitigation Measure BIO-3: Protect Special Status Fish Species

- The Mattole Salmon Group (MSG) will initiate a formal consultation with National Marine Fisheries Service (NMFS) Section 7 of the Endangered Species Act (ESA).

- Contractor shall thoroughly clean heavy equipment that will be in the stream channel. Prior to construction all heavy equipment will be inspected thoroughly for oil and fuel leaks and inspected routinely throughout the construction period. Refueling or oiling of any machinery will occur only within the staging area and with proper materials immediately available for spill cleanup. Contractor will develop and implement site-specific BMPs to minimize the risk of

hazardous material contamination. Fuels and lubricants shall not be stored at the Project site after hours or on the weekends.

- In the event of a spill, the local CDFW office shall be notified and consulted regarding clean-up procedures. Large spills should also be reported to the Office of Spill Prevention and Response, 1700 K Street, Suite 250 Sacramento, CA 95811, or report oil spills to 800-852-7550 or 800-OILS-91

- Instream construction will be limited to June 15 – October 31 to avoid working during wet season conditions. This specific timeframe will allow time for young-of-the-year salmonids to be mobile and decrease their risk to injury, allow downstream migration of smolts to be completed prior to channel disturbance and avoid construction during the rainy season when adult salmonids are entering freshwater to spawn. Construction activities will cease before October 31 with the presence of rain.

- A qualified biologist or Project partner will implement a fish screen capable of precluding movement of aquatic amphibians, fish and reptiles into the active areas of excavation or soil disturbance in the Bear Creek channel and check routinely throughout project duration to ensure proper function. The project will follow the Fish Screening Criteria for Salmonids (NMFS 1997), NOAA Restoration Center/Army Corps of Engineers programmatic biological opinion requirements. The fish screen should be check at a minimum of 2 times per week to ensure proper function by a qualified biologist.

- No Project activities will allow the use of pesticides, herbicides, or rodenticides.

Implementing the mitigation measures outlined in **BIO-3** will reduce the potentially significant impacts on special status fish to less than significant.

Special Status Invertebrates

The Wildlife Assessment identified two special status invertebrates that could potentially occur in the Project area: western bumblebee (*Bombus occidentalis*) and mountain shoulderband (*Helminthoglypta arrosa monticola*). The western bumblebee likely occurs in the Project area but is not likely to be adversely affected based on the proposed Project activities. The mountain shoulderband has low potential to occur because there is not suitable habitat available in the Project area. The potential impacts on these species are considered less than significant and do not require mitigation measures.

b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?**

Less Than Significant with Mitigation Incorporated: Riparian habitat is identified by CDFW and the Regional Water Quality Control Board as areas within and adjacent to rivers, streams and creeks that typically support plant species that tolerate occasionally or permanently flooded conditions. These corridors provide unique habitat essential to watershed function and stream health. As a result of past land use and stream degradation, riparian communities have suffered, encouraging their consideration under CEQA requirements. To address these considerations, the CDFW CNDDB has ranked sensitive vegetation communities into the following: S1 (Critically Imperiled), S2 (Imperiled) and S3 (Vulnerable).

The Vegetation Assessment identified one S3 vegetation community within the Project area: the plant association characterized as Alnus rubra / Salix lasiolepis / Rubus spp. (Sawyer et al. 2009). This riparian vegetation association type dominates the majority of the project footprint and will experience potential

impacts as a result of Project activities including vegetation clearing for access to Project site and excavation of the new Bear Creek channel. Impact to this association is considered potentially significant and will require mitigation measures.

Mitigation Measure BIO-4: Protect S3 Vegetation Association

- Project contractor will ensure that the minimum amount of vegetation will be cleared in order to carry out project activities such as staging and road building.
- To ensure that the spread or introduction of invasive plants is avoided to the maximum extent possible, equipment shall be cleaned thoroughly of all dirt, mud and plant material prior to entering the work site. When feasible, invasive plants at the work site will be removed.
- There will be no use of herbicide in or around the Project area.
- Disturbed areas will be fully restored upon completion of construction. Cleared areas will be revegetated with native species, including species present in the S3 vegetation association. Planting techniques will follow guidelines put forth in Part XI of the California Stream Habitat Restoration Manual, including a 2:1 ratio (two individuals planted for every one removed) and an appropriate planting time frame (after December 1, or when sufficient rainfall has occurred, but in no case after April 1) to maximize seedling survival.

The Project is restorative by design and by incorporating Mitigation Measure **BIO-4,** will ensure the protection of S3 vegetation community Alnus rubra / Salix lasiolepis / Rubus spp and the overall enhancement of the natural habitat. Implementing the outlined measures will reduce the impact to less than significant. Once established, revegetation efforts will result in an increase in area and quality of riparian cover in the Project area.

c) **Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Less Than Significant with Mitigation Incorporated: Wetlands are defined by the California Coastal Commission as areas that are inundated or saturated by surface or ground water that normally support vegetation adapted to consistently wet soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. These ecotypes are crucial hubs of biodiversity, effectively purify water, promote groundwater recharge and buffer against flooding and erosion.

A portion of the Project area is intermittently connected to the mainstem Mattole River and may support hydrophytic vegetation, hydric soils and wetland hydrology. These sections likely qualify for three-parameter wetlands and fall within U.S. Army Corps of Engineers (USACE) and North Coast Regional Water Quality Control Board (NCRWQCB) jurisdiction. The Project area is within the California Coastal Commission jurisdiction and likely has some areas that qualify for one-parameter wetlands. The Project design includes some activities that may have temporary or permanent effects on wetlands. It is important to note that in the design process four different alternatives were evaluated and the current design option has the lowest impact to existing wetlands. Also of note is that the project intent is to improve the condition of the riparian and wetland habitat in the project area from its current degraded state.

Activities that may potentially affect wetlands include heavy machinery operation within the Project area which may fill wetland areas, installation of a clear water diversion and use of a dewatering system.

Diverting water for the Project may be necessary to ensure working in dry soil conditions. Construction activities will occur during the driest months of the year; thus the minimum amount of water will be diverted. Water management feature designs including cofferdams, clean water diversion systems and dewatering systems are described in Figure 5.

Impacts to wetlands as a result of Project activities will be offset by the creation of valuable off channel habitat and the existing wetlands in proximity to the Dogleg Pool will be enhanced by additional flow coming from the rerouted Lower Bear Creek channel. However, this Project recognizes the potential impacts to essential wetlands habitats in the area and will incorporate mitigation measures to ensure the impact is less than significant.

Mitigation Measure BIO-5: Protect One- and Three-Parameter Wetland Habitat

Project design will limit filling wetlands with dredged or fill material to the greatest extent possible. In cases where this cannot be avoided, the following mitigation measures will ensure minimal impact to wetlands in the Project area.

- Prior to construction activities, the Project will obtain a USACE permit under Section 404 of the Clean Water Act, and a NCRWQCB permit under Section 401 of the Clean Water Act. The Project will also obtain a Lake and Streambed Alteration Agreement from CDFW prior to construction.

- A thorough dewatering plan will be developed by the Mattole Salmon Group and the contractor and presented to regulatory agencies for review and acceptance at least 15 days prior to construction.

- Staging and stockpiling areas will be at least 100 feet from any existing wetlands, and appropriate erosion control BMPs (silt fences, fiber rolls) will be installed between the staging areas and work zones to minimize any sediment runoff into wetlands. Any stockpiles expected to remain onsite throughout the rainy season will be properly protected from rain and wind by using tarps, silt fences, mulch and straw bales.

- Areas disturbed by Project activities will be thoroughly revegetated and mulched upon Project completion so as not to cause any erosion.

- Refueling of equipment will not occur within 100 feet of any wetland area.

- Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., USACE, Regional Board, and CDFW) shall be implemented and completed pursuant to established criteria and/or schedules. All measures contained in Project permits or associated with agency approvals shall be implemented in a timely manner.

The Project is restorative by design and by incorporating Mitigation Measure **BIO-5,** will ensure the protection of wetland habitat and improve/increase the amount of available wetland habitat. The mitigation measures will ensure that any potential impacts to wetlands are reduced to less than significant.

d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

Less Than Significant: Habitat connectivity refers to the degree that organisms and processes can move unimpeded across habitats – in a world dominated by infrastructure, wildlife rely on movement corridors to find food, water, mates and to allow dispersal from high population density areas. Movement corridors such as drainages, ridgelines, peninsulas, or vegetated areas can be impeded by unfriendly terrain, changes in vegetation or anthropogenic disturbance.

The Project area is located within the Pacific Flyway for migratory birds. However, no large expanses of high-quality natural habitat exist that would support high levels of migratory species stopover use, breeding, or wintering specifically within the Project area. The movement of migratory birds would not be impeded by the Project, which is intended to enhance an existing diverse riparian ecosystem. Thus, no impact would result.

The Project will not result in the creation of barriers to fish passage, as there will be no permanent modification to adult or juvenile movement into suitable watercourses. Construction would occur during summer and fall when Mattole River stream flows are at their annual minimum, after juvenile salmonids have out-migrated and before adult salmonids migrate upstream. Prior to construction, the wetted portion of the channel will be surveyed by a qualified biologist and any fish species encountered will be relocated consistent with protocols required by CDFW and NMFS before water management techniques are put into place. The maximum duration of time during which a small area of the river may be dewatered is 90 days. Following construction, coffer dams and other structures used during dewatering would be removed. The Project is designed to increase available spawning and rearing habitat in Lower Bear Creek and the Dogleg Pool and any impacts to fish movement will be temporary and will not impact their ultimate survival. The Project will not have a significant impact on fish passage.

Riparian habitat can also function as a wildlife corridor. Maintaining riparian connectivity throughout the Project area will maintain wildlife habitat and migration corridors. A very small amount of riparian will be removed to allow for machinery access, but it will not result in disconnecting any suitable habitat. Any disturbed areas will be revegetated with native riparian plants. As a result, the Project would not substantially alter the ability of wildlife to travel, and the impact would be considered less than significant.

e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

No Impact: The Conservation and Open Space Elements of the Humboldt County General Plan guide the conservation, development and utilization of natural resources and protect open space assets of the county. This Project is designed to enhance and restore habitat for salmonids and thus is consistent with the General Plan Development within Stream Channels Standard (BR-S6). All construction activities associated with the Project adhere to the Erosion Control Standard (BR-S9); mitigation measures to minimize erosion are discussed in **BIO-2, BIO-3, BIO-4** and **BIO-5.** The Project is consistent with Wetlands Defined Standard (BR-S11) and Development Standards for Wetlands (BR-S10). Mitigation measures pertaining to wetlands are outlined in **BIO-5,** and are consistent with the Streamside Management Required Mitigation Measures Standard (BR-S8). Development within a Streamside Management Area requires a use permit from Humboldt County, which the Project would obtain. The Project is thus consistent with County policies and ordinances protecting biological resources. No impact would result.

f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

No Impact: Currently there is not an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plans that cover the Project Area. No impact would result.

3.5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

A Cultural Resource Investigation Report was conducted for the Project in May 2021. In order to complete this investigation, Roscoe and Associates conducted a review of regional archaeological and ethno-geographic literature, and historical maps; a project area record conducted by the California Historical Resources Information System's Northwest Information Center (NWIC) in Rohnert Park California; correspondence with local Native American tribal representatives; and a pedestrian field survey.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact: The NWIC record search revealed that portions of the Project Area have been included in two previous cultural resource investigations, however no cultural resources were identified by these studies (S-042049| Rich et al. 2003, and S-051527 (Roscoe and Raskin 2015). No resources have been found within the direct Project Area; two resources are present within 0.5 miles. The Mattole Lumber Company Wharf and Railroad (P-12- 001174) is documented 0.17 miles north of, and across the river from, the Project Area. This resource has reportedly been largely destroyed (Greenway 1997). The early 20th -century Clark Barn (P-12-001173) is documented 0.30 miles north of the Project Area. The Kinnear-Ferris 2018 study encompasses portions of the current Project Area and found that the previously documented Mattole Lumber Company Wharf and Railroad (P12-001174), no longer demonstrates physical integrity, likely as a result of being buried by huge mud slides during particularly large storm events. This site has been evaluated as not eligible to the National Register of Historic Places (NRHP). No archaeological deposits buildings or structures that would qualify as historical or unique archeological resources (CEQA Guidelines Sections 15064.5 (a) and 21083.2 (g)) and no tribal cultural resources (in California Public Resources Code Section 21074), were identified within the proposed Project Area during this investigation. In addition, no historic properties were identified in the Project Area (NHPA of 1966, as amended (16 USC 470f), and it's implementing regulations). As such, there will be no impact to historical resources as a result of the Project.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant with Mitigation Incorporated: The Cultural Resource Investigation Report completed in 2021 by Roscoe and Associates (Roscoe, 2021) yielded no previously recorded or newly documented archaeological sites within the Project area. Roscoe and Associates initiated correspondence

with Tribal Representatives from the Bear River Band of Rohnerville Rancheria and reported that there was no knowledge of previously identified Sacred Lands within the Project area.

Although no archaeological resources were observed, in order to provide protection for archaeological resources that may be inadvertently discovered during the course of construction, Mitigation Measure **CR-1** will be implemented to establish protocols for inadvertent archaeological discovery.

Mitigation Measure CR-1: Inadvertent Discovery of Archaeological Material

Prior to construction, a meeting shall be held with field contractors, where the protocols for inadvertent discovery (described in **CR-2**) will be communicated. If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 66 feet of the discovery, per the requirements of CEQA (Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action. Tribal representatives shall be notified.

Implementation of Mitigation Measure **CR-1** would reduce the potential impacts to a less than significant level during construction because a plan would be implemented to address discovery of unanticipated archaeological resources and to preserve and/or record those resources consistent with appropriate laws and requirements.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation Incorporated: The Cultural Resource Investigation Report completed in 2021 by Roscoe and Associates (Roscoe, 2021) yielded no previously recorded or newly documented archaeological or historic sites within the Project area, though inadvertent discovery of human remains has the potential to occur. In the event of a discovery, the Project will implement Mitigation Measure **CR-2** to ensure any potential impact would be less than significant.

Mitigation Measure CR-2: Inadvertent Discovery of Human Remains

If human remains are discovered during project construction, work will stop at the discovery location, within 66 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner will be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The Coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.

Implementation of Mitigation Measure **CR-2** would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to address discovery of unanticipated human remains and to preserve and/or record those resources consistent with appropriate laws and requirements

3.6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		X		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Section 1.4 Project Construction outlines construction activities associated with the Project, which will require the use of gas, diesel and motor oil. Once mobilized, any heavy machinery used for construction will remain staged at the Project area during construction periods. Excavated material and trees will be stockpiled onsite and re-used for grading and habitat creation.

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact with Mitigation Incorporated: Avoiding construction inefficiencies has been outlined in Section 3.3 Air Quality (a) under Mitigation Measure **AQ-1** which reduces the maximum allowable idling time to five minutes or less. The proposed activities will not require large inputs of fuel and energy because the Project area is relatively small (~8 acres total footprint). Operation and maintenance of the Project will not require heavy machinery and could generally be completed with the use of small vehicles and hand tools, therefore not contributing a substantial increase in energy use. In the event that the Project requires isolated maintenance with the assistance of heavy machinery, appropriate BMPs outlined in **AQ-1** will be followed. The potential for significant impacts as a result of wasteful, inefficient or unnecessary consumption of energy is reduced to less than significant with the incorporation of Mitigation Measure **AQ-1.**

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact: There are no local plans for renewable energy that would apply to the Project site. Implementation of the Project will not obstruct a state plan for renewable energy, nor inhibit the implementation of the State Energy Action Plan or any other State regulations. The majority of California's energy-related plans are not directly applicable to the Project or its operations; however, the Project complies with those plan requirements that apply. The Project would therefore not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, as no component of the Project would require an energy source, beyond the temporary use of construction equipment. No impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii. Strong seismic ground shaking?				X
iii. Seismic related ground failure, including liquefaction?			X	
iv. Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?		X		
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Regional geology in the Project area is influenced largely by seismic activity associated with the Mendocino Triple Junction which lies directly off the coast of the Project vicinity. A Geotechnical Report was conducted by SHN to describe the site terrain and local geology, assess potential earthquake-related hazards and provide mitigation as necessary and provide guidance for the engineered crossing. The lower Mattole River and adjacent floodplain are underlain by Holocene-aged undifferentiated stream channel (alluvial) deposits (map unit Qscu; Davenport et al., 2002) and Holocene- to Pleistocene aged river terrace deposits (map unit Qrt). The undifferentiated stream channel deposits are described as unconsolidated sediments in active channels and floodplains. The river terrace deposits, which are present beneath the majority of the driveway entering 2885 Lighthouse Road are described as predominantly sand and gravel with lesser silt and clay deposited during higher stream flows over flat lying to gently inclined platforms. The proposed bridge is planned at the back edge of the river terrace deposits (Qrt), where they contact the mélange bedrock.

a-i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact: There are no active faults mapped beneath or projecting toward the subject site according to the maps we reviewed (USGS, 2014; Davenport et al., 2002; Jennings and Bryant, 2010). There were no surficial indications of faulting at the project area during our site reconnaissance. Alquist-Priolo Earthquake Fault Zone maps, which generally show active fault lines and associated fault zones in California, have not been prepared for this region by the California Geological Survey (CGS, 2018). Based on the lack of faults beneath and/or projecting toward the site, the risk of surface fault rupture from active faulting at the site is considered low to moderate. Due to the proximity of the Mendocino Triple Junction, there is potential for new, unmapped faults to present themselves or to form over time. The Honeydew fault zone is the closest known active fault/fault zone, and the nearest reach of the fault zone is approximately 3.5 miles northeast of the project area, trending in the northwest direction. Project activities will not rupture any faults. No impact will result.

a-ii) Strong seismic ground shaking?

No Impact: According to the Earthquake Shaking Potential for California map (Branum et al., 2016), the project site is located in a region near major, active faults and will experience stronger earthquake shaking more frequently. The shaking may be capable of damaging even strong, modern buildings. However, strong seismic ground shaking will not occur as a result of shallow excavation and road grading proposed by the Project. The Project is designed with site-specific recommendations made by the SHN Geotechnical Report including a bridge crossing that will withstand seismic shaking, retaining walls and adequate compaction. No impact will result.

a-iii, a-iv, c, d) Seismic related ground failure, including liquefaction, landslides, or otherwise unstable soils?

Less than Significant: Liquefaction is a soil behavior phenomenon in which soil located below the groundwater surface temporarily loses strength during and immediately after a seismic event as a result of strong earthquake ground motions. The soil profile underlying the proposed bridge at the project site is determined to have moderate to high susceptibility to liquefaction during the design earthquake based on the density of the material and the results of the liquefaction analysis. Expansive soils shrink and swell in response to soil moisture levels and generally have a large clay component. NRCS Web Soil Survey classifies the project area as 22.6% Caperidge-Taylorpeak-Northbear complex, 50-75% slopes, 15.8% Northbear-Caperidge-Taylorpeak complex, 30-50% slopes and 61.6% Fluvents, 0-2% slopes, occasionally flooded. Caperidge is described as very gravelly loam and very gravelly sandy loam. Taylorpeak is described as slightly decomposed plant material atop very gravelly loam and extremely gravelly sandy loam. Northbear is described as gravelly loam. There is no shrink swell clay present in the project area, thus very little potential for expansion and contraction.

Liquefaction estimates a maximum of vertical settlement of approximately 1 inch during worst-case seismic and shallow groundwater conditions (conservative depth of groundwater at 10 feet BGS). Ground improvements and foundation design construction recommendations intended to mitigate the potential for structural distress as a result of both static and earthquake induced settlements are discussed in the Geotechnical Report prepared for the Project. The distance of the nearest descending slope face greater than 7 feet in height (in this case the south bank of the Mattole River) to the proposed bridge is more than 770 feet. Due to the significant distance to this slope face, we judge the potential for lateral spreading to occur at the site to be negligible. In addition, the steep hillside terrain south of the proposed bridge is bedrock, which is not expected to liquefy and be transported laterally. These recommendations will be followed and result in a less than significant impact.

The proposed bridge and realigned driveway are planned at the base of steeply sloping terrain, at the mouth of the Bear Creek watershed, at the apex of a broad alluvial fan. Based on mapping by Davenport et al. (2002) and SHN review of aerial photographs and LIDAR imagery, historical slope failures have occurred previously in the watershed and along the north flank of the ridge in close proximity to the project area. The failures have delivered large volumes of sediment down the Bear Creek drainage. Based on previous failure events, there is a moderate to high risk that future landslides (static or seismically-induced) occur in the Bear Creek drainage and a catastrophic release of material is delivered to the proposed bridge. This hazard applies to the mouths of drainages throughout the region.

The Project activities follow design plans made by experienced engineers and will not cause landslides. Any landslide events in the area are likely a result of past land use (e.g. logging) and seismic events. The project impact is considered less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant with Mitigation Incorporated: In its current configuration lower Bear Creek is causing substantial erosion on the north side of Lighthouse Road where flows spill over the road due to an obstructed culvert. Completion of the Project would stabilize Lighthouse Road and result in a decrease in bank erosion into the mainstem Mattole. Project activities include vegetation clearing, grading and excavation, all which involve heavy machinery and could be potential sources of soil erosion or loss of topsoil. Mitigation Measure **GEO-1** will be implemented to ensure that any construction related erosion is reduced to less than significant.

Mitigation Measure GEO-1: Erosion Control

- Construction will occur in late summer when flows are at their lowest and chances of precipitation are minimal. Heavy machinery will not be excessively operated in wetted channels.

- Stockpiling and staging areas will be isolated from the Project area by using silt fences, mulching, straw bales.

- Disturbed areas will be revegetated with native plants and mulched to prevent loss of topsoil.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact: The Project design does not include the installation of septic tanks or any kind of wastewater disposal systems. There will not be an impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant with Mitigation Incorporated: Paleontological resources are prehistoric remains of animals or plants including fossils and geologic areas with fossil-bearing strata. These resources are non-renewable and are protected under environmental legislation in California under PRC § 5097.5, which outlines that unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC § 30244).

The Project area has seen a significant amount of construction (e.g. Lighthouse Road, private driveway, grading on private parcels) and the proposed activities do not include any deep excavation or any other kind of work that would be likely to result in the inadvertent discovery of paleontological resources. In the event that paleontological resources are inadvertently discovered as a result of Project activities, the impact

would be considered potentially significant. Mitigation Measure **GEO-2** will ensure that the potential impacts are reduced to less than significant.

Mitigation Measure GEO-2: Inadvertent Discovery of Paleontological Remains

If paleontological remains such as bones, teeth or fossils are discovered during construction activities will be required to give the site a 50-foot buffer and a professional paleontologist will be notified to document the discovery, evaluate the potential resource and determine its significance. The paleontologist will determine if work can continue in the area without further damaging the resource or recommend salvage of the resource. Any fossils collected from the area will be deposited in an accredited scientific institution where they will be properly curated and preserved.

The implementation of Mitigation Measure **GEO-2** will ensure that the impacts to paleontological resources remain less than significant.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant: The project would emit GHG emissions during construction from heavy machinery earthwork, construction crewmember commute trips and importing any necessary materials. Completion of the Project will not result in increased vehicle traffic or machinery use and will not contribute long-term to greenhouse gas emissions.

The North Coast Unified Air Quality Management District (NCUAQMD) has not yet developed policies regarding GHG emissions or established CEQA significance criteria. Construction emissions were estimated using CalEEMod version 2020.4.0 and were estimated to be approximately 502.5 MTCO2e from all construction activities, or 16.75 MTCO2e per year when annualized over the assumed 30-year lifespan of the Project. The Project is not capacity enhancing and would not likely result in more vehicle trips. Required maintenance of the Project would be similar to what maintenance requirements are currently. Therefore, the Project would not generate an increase in operation-related emissions.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant: The project will not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. GHG emissions in California are regulated under several state-wide measures, most prominently the California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, which requires the CARB to develop and enforce

regulations for the reporting and verification of statewide GHG emissions and sets limits on state emissions.

Locally, the NCUAQMD maintains air quality conditions in Humboldt County and administers a series of air pollution reduction programs, including open burning permits, grants, permitting of stationary sources, emission inventory and air quality monitoring, and planning and rule development. The Humboldt County General Plan commits to concrete actions to further reduce countywide GHG emissions. The County is currently preparing a Climate Action Plan (CAP). Although not yet finalized, the County is suggesting GHG reduction targets of 40 percent below 1990 levels by 2030, and 60 percent below 1990 levels by 2040.

As previously described, this project will generate GHG emissions during the construction phase, but all long-term operations will not emit GHGs. In summary, this project does not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant: Construction of the Project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products such as fuel and lubricants for construction equipment and vehicles, paints, concrete curing compounds, and solvents for construction of Project improvements. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

Hazardous materials storage, handling, and transportation must comply with an interconnected matrix of local, state, and federal laws. Hazardous materials used during construction of the Project will be subject to applicable regulations, including California Health and Safety Code Section 25531, Division 20, Chapter 6.5 and other standards enforced by the various departments and boards under the California Environmental Protection Agency (Cal/EPA). The Project will be subject to Cal/EPA hazardous materials regulations

consolidated under the state's Unified Program enforced by the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (SWRCB), North Coast Regional Water Quality Control Board (Regional Board), NCUAQMD, and the Department of Resources Recycling and Recovery (CalRecycle). The Cal/EPA administers the Unified Program via local Certified Unified Program Agencies (CUPAs). The CUPA for Humboldt County is the Humboldt County Division of Environmental Health (HCDEH). The HCDEH Hazardous Materials Unit has jurisdiction over the Project area and is tasked with local CUPA inspections and compliance. Project activities involving the transport, use, storage, and disposal of hazardous materials will be in accordance with established rules and regulations.

Worker exposure to hazardous materials is regulated by California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) and requires worker safety protections. Cal/OSHA enforces hazard communication regulations which require worker training and hazard information (signage/postings) compliance. In addition, hazard communication compliance includes procedures for identifying and labeling hazardous substances, communicating information related to hazardous substances storage, handling, and transportation; and preparation of health and safety plans to protect employees.

The established regulatory framework, BMPs, and requisite construction protocols provide appropriate risk mitigation and hazard protections, thus the Project would not create a significant hazard to the public or environment from hazardous materials. Because the County and its contractors would be required to comply with existing and future hazardous materials laws and regulations addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during Project construction would be less than significant.

Following construction, operation of the Project would require intermittent maintenance and repair, which could involve hazardous materials. The operational risk posed by intermittent maintenance and repair of the road specific to hazardous materials is low. The potential to create a significant hazard to the public or the environment during Project operation would be less than significant.

Project construction would be required to implement stormwater management requirements during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit (Section 1.7.1 – Environmental Protection Action 1). Stormwater management requirements for addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes, as described in Section 3.10 (Hydrology and Water Quality).

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant with Mitigation Incorporated: Project activities require the use of heavy machinery to accomplish grading, excavation, and transportation of materials and poses a risk for fuel spills. A potentially significant impact could result from an accidental spill, especially in proximity to a wetland or waterway. This potential impact is addressed under Mitigation Measure **BIO-5** (see Section 3.4 – Biological Resources) which specifies that equipment shall not be refueled within 100 feet of any perennial wetlands or waterways. With the incorporation of Mitigation Measure **BIO-5**, any potential impact related to streams and wetlands from an accidental spill would be reduced to less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact: Mattole Unified School District, the closest school, is 4 miles northeast from the proposed Project area. There are not any plans for a proposed school within 0.25 miles of the Project area. The

Project will not emit hazardous emissions or handle hazardous materials within 0.25 miles of an existing or proposed school

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact: The Project area is not located on, or within one mile of a site listed in the DTSC EnviroStar database (DTSC 2022). Further, the Project Area is not located on or within one mile of a site included in the Cal/EPA's list of Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit, nor is the Project Area located on or within one mile of any site included in Cal/EPA's list of active Water Board Cease and Desist Orders and Cleanup and Abatement Orders (Cal/EPA 2022). No impact would result.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact: The Project Area is located approximately 22 miles north of the Shelter Cove Airport (0Q5). The Shelter Cove Airport is covered by the 2021 Airport Land Use Compatibility Plan (ALUCP) prepared for the Humboldt County Airport Land Use Commission (ALUC) by ESA. Per the ALUCP, the Project Area is not located within the Airport Influence Areas (AIA) (ESA 2021). Given the Project is not located within two miles of a public airport and is outside the AIA, no impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant: The Project area is covered under the Humboldt County Emergency Operations Plan. The County Plan conforms to the statewide Standardized Emergency Management System (SEMS), and the nationwide National Incident Management System (NIMS), for coordination, response, and recovery during emergencies. It also coordinates with the State of California Emergency Plan and is an extension of that plan (Humboldt County, 2015). The Humboldt County EOP identifies the emergency response and evacuation policies and procedures for hazards related to earthquake, tsunami, extreme weather, flooding/flash flooding, landslides, transportation accidents, hazardous materials, interface wildlife fire, energy shortage, offshore toxic spill, civic disturbance, terrorist activities, and national security (Humboldt County 2015).

Lighthouse Road is a thoroughfare for residents that live on LHR and Prosper Ridge and it is also the northernmost access to the Mattole Beach for Lost Coast Trail hikers. In its current configuration, lower Bear Creek flows over Lighthouse Road and into the Mattole River during high water events jeopardizing the safety of road users and eroding more of Lighthouse Road each year. Re-routing Bear Creek to run alongside Lighthouse Road, and then underneath a culvert will increase the longevity of Lighthouse Road and improve its safety for residents and emergency response vehicles especially during the wet season.

Temporary road closure (up to one hour) would be required during Project construction as described in Section 1.4 (Project Construction). Signage, notifications, and timing for road closure, as applicable, would be established in accordance with the County of Humboldt requirements. Emergency response vehicles would not be impeded during road closures.

The Project would not impair implementation or physically interfere with the established Humboldt County EOP, or Humboldt County HMP. Once constructed, operational use of the Project would enhance transportation along Lighthouse Road. Thus, emergency response or evacuation via existing roadways would not diminish compared to existing conditions. As the Project would not impair implementation of an

emergency response plan or evacuation plan, the potential impact related to the temporary closure of Lighthouse Road during construction would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less than Significant: Wildland fire is addressed in Section 3.20 (Wildfire). As noted in Section 3.20, the Project would not expose people or structures to a significant risk from wildland fires, thus a less than significant impact would result. Please see Section 3.20 for further discussion of the Project as it relates to wildland fire risks.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		X		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on or off-site;		X		
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv. impede or redirect flood flows?		X		
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

The Project area is in the Lower Mattole River watershed. The Project area contains the Mattole River, a Clean Water Act section 303(d) listed for impairment associated with excessive sediment and high water temperatures (EPA 2002). The Project is required to obtain and comply with all Clean Water Act permit requirements defined by US Army Corps of Engineers and Regional Water Quality Control Board.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant with Mitigation Incorporated: Construction activities including vegetation clearing, excavation and grading will increase the amount of disturbed sediment in the Project area that may be mobilized by wind or rain. Construction will occur in or adjacent to the wetted channel and will temporarily increase turbidity in the channel and increase the potential for chemicals or hazardous materials to be leaked into the watercourse. Based on this information and understanding the requirements set forth by the Clean Water Act the Project has the potential to impact water quality.

As described in Section 1.7.1 (Environmental Protection Action 1), because the proposed Project is anticipated to disturb over one (1) acre of land, compliance with State Water Board Order No. 2009-0009 would be required which will regulate stormwater runoff from Project construction activities. Project operations will obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the National Pollutant Discharge Elimination System requirements, a Notice of Intent would be prepared and submitted to the North Coastal Regional Water Board prior to undertaking construction, providing notification and intent to comply with the State of California Construction General Permit (CGP). In addition, a SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities. The SWPPP will outline BMPs that address erosion and sediment control, off-site tracking control, wind erosion, non-stormwater management control, and waste management and pollution control. This will include a sampling and monitoring program that meets the requirements of the CGP to ensure effectiveness.

Project construction will occur during the dry season (June 1 – November 1) when flows are at their lowest, however there will likely be a need for dewatering in the Project area. A Water Management Plan has been developed and is explained in Figure 5. This plan includes a temporary fish exclusion device, coffer dams, sump pits and gravity diversion pumps. Specific dewatering methodology will be outlined in a Dewatering and Diversion Plan submitted to CDFW and NMFS at least 30 days prior to construction. This plan will detail fish exclusion devices that will be installed upstream and downstream of the Project area by qualified personnel, and the coffer dams that will be installed using hand labor with support from machinery not working within the wetted channel. Sump pumps and water diversion devices will be installed by qualified personnel. The maximum duration of time during which the small area would require dewatering is 90 days. Any turbid nuisance water will not be directly discharged to a water body in compliance with the Project's SWPPP. At the close of construction, all dams and other infrastructure will be removed. Any fish relocation that must occur during the dewatering process will be done by a qualified biologist in accordance with CDFW and MNFW protocols, Project regulatory approvals, and Mitigation Measures **BIO-2, BIO-3, BIO-5** and **GEO-1.**

Upon completion the Project will not result in an increased amount of erosion or other threats to water quality. On the contrary, the Project will stabilize Lighthouse Road and decrease the amount of erosion currently occurring. By implementing Mitigation Measures **BIO-2, BIO-3, BIO-5** and **GEO-1** will reduce the potentially significant impacts on water quality to less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact: The Project is located in the Mattole River Valley Groundwater Basin 1-029 (DWR 2004), which has a SGMA Basin Priority of Very Low and is not listed as Critically Overdrafted (DWR 2019). Contractor-supplied water would be used during construction for dust suppression on local roadways and work areas. Use of groundwater is not anticipated for construction of the Project, although dewatering sections along the

reconstructed Bear Creek Channel may be necessary and discussed in impact "a". Completion of this Project will route cold-water flows from Bear Creek back into the Middle Slough, ultimately increasing groundwater supplies.

During Lighthouse Road and private drive construction, isolated and short-duration groundwater dewatering may occur as needed and would be small in scale and limited to shallow groundwater only. The construction-related impact on groundwater levels would not result. Following construction, the Project would not utilize groundwater and would not result in an increase in population or employment that would indirectly increase groundwater demand. The Project will route flows from Lower Bear Creek back to the Dogleg Pool and Mattole slough and will likely increase - not decrease - groundwater recharge. Therefore, the Project would not create a deficit in aquifer volume or a lowering of water levels. Additionally, the amount of impervious surface created by the Project is minimal since much of the road construction involves improving existing roadways. There is a small section of new gravel road construction on the east side of the Project where a new private drive entrance will be constructed but this area will not significantly increase the impermeable surfaces. No operational impact would result.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site;

Less than Significant with Mitigation Incorporated: The Project would add less than 0.5 acres of impervious surfaces to the Project Area through the repair of Lighthouse Road and construction of a new driveway. The Project will install a new culvert and off-channel habitat to buffer erosion of Lighthouse Road and the private drive during storm events. Erosion and sediment prevention would be implemented during construction to avoid impacts to water quality, including those related to siltation (see impact "a", above). The Project would be required to adhere to BMPs and conditions to be included in a SWPPP and CWA Section 401 and 404 permits, including Mitigation Measure **GEO-1**, to prevent erosion-related impacts during construction. Substantial on- or off-site erosion and siltation would not result, and the potential construction-related impact with regard to erosion and siltation would be less than significant. The Project would install riprap and live willows at discharge sites, therefore, with Mitigation Measure **GEO-1** the operational impact would also be less than significant.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

Less than Significant: The majority of the Project construction will occur in the FEMA 100-year flood zone – the sections of Lighthouse Road and the private drive that are part of the Project already lie within the flood zone. Within the Project area, existing stormwater drainage systems along the road are minimal. The culvert that Bear Creek most recently flowed through has been clogged with sediment, resulting in discharge flowing over Lighthouse Road and into the Mattole River. Lighthouse Road is a highly compacted gravel road, with minimal water infiltration. The Project would repair the road to be consistent with previous conditions. A new section of private drive will be constructed and will also be a compacted gravel road, totaling less than 0.5 acres in new impermeable surfaces. The Project is designed to effectively route flows back into the Mattole River and reduce flooding events that occur as a result of existing conditions. The potential impact to on- and off-site flooding would be less than significant.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less than Significant: Existing conditions in the Project area indicate that current stormwater drainage systems are not functioning properly and contribute to detrimental flooding during storm

events. This is a hazard for users of Lighthouse Road and likely contributes polluted runoff to the Mattole River. The Project would improve drainage systems with the rerouted channel, replacement of a culvert, and the creation of off-channel habitat to buffer stormwater flows.

Grading would occur during summer and fall months when conditions are driest, to minimize the risk of rainfall during the construction period and thus stormwater runoff when graded soils are exposed. As discussed above in Hydrology and Water Quality Impact (a), requirements of the SWPPP, CWA Section 401, CWA Section 404 permits, and **GEO-1** would also be implemented, including measures to prevent polluted stormwater runoff during construction. Thus, any construction-related impact would be less than significant.

Operationally, the Project does not include elements that would significantly alter topography and rates of stormwater runoff. The potential operational impact would be less than significant.

iv. impede or redirect flood flows?

Less than Significant: Bear Creek flow in the Project area drains into an alluvial fan at the base of the steep canyon channel, evades previously installed culverts that have become clogged with sediment and ultimately spills over Lighthouse Road into the Mattole River. One of the Project objectives is to redirect flows through a channel that can support larger storm events and feed excess water into the Mattole Middle Slough. Rerouting the channel is a necessary action to eliminate delivery of flow onto Lighthouse Road and will therefore decrease the amount and rate of erosion that currently exists.

Road construction and crossing installation will not impede or redirect flows in a way that would cause harm or destruction to the Project area and surrounding areas. Rerouting flow from Bear Creek will increase longevity and stability of the Project area and create beneficial off-channel habitat for aquatic species. A less than significant impact will result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant: The majority of the Project construction will occur in the FEMA 100-year flood zone – the sections of Lighthouse Road and the private drive that are part of the Project already lie within the flood zone. The site is located within a "Tsunami Hazard Area" as mapped by CGS (2009, updated in 2021). Considering the seismic activity at the site and along the Pacific Rim, tsunamis should be expected to surge up the Mattole River to the project area. The tsunami hazard applies to all of Lighthouse Road.

Project construction and the use of unsecured items will occur only during the dry season (June 1 – November 1) when risk of flood is essentially nonexistent, and a flood-related release of pollutants is highly unlikely. Permanent infrastructure does not include the use of materials that are unsecured and would contaminate waterways.

Construction materials and permanent infrastructure have the potential to contaminate waterways in the event of a tsunami. The Project has been designed with this possibility in mind and all project components have been engineered to maximize their stability in flood or tsunami events.

Operational maintenance of the road may involve occasional repair, trash/debris removal, and vegetation maintenance (e.g., mowing), which could involve hazardous materials (e.g., small equipment fuel). However, these materials would not be stored within the Project area and thus would not be released into the environment in the event of a flood event. Any potential operational related impact would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact: The relevant water quality control plan is the NCRWQCB's Basin Plan which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Project does not involve the use of groundwater resources and would not impact the quantity or quality of groundwater availability in the Mattole River Valley Basin.

Per Environmental Protection Action 1 (see Section 1.7.1), the Project would be required to obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include development and implementation of a SWPPP. The Project is also required to obtain and adhere to CWA Section 401 and CWA Section 404 permits (see Section 1.7.2 – Required Regulatory Permits). Adherence to these regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur.

The Project would meet and/or support the following Humboldt County General Plan Water Resource Element goals and policies that regulate hydrology and water quality during construction and operation of the Project: Storm Drainage (Policy WR-G10), Erosion and Sediment Discharge (Policy WR-P10), County Facilities Management (Policy WR-P11), Implementation of NPDES Permit (Policy WR-P35), Natural Stormwater Drainage Courses (Policy WR-P36), Erosion and Sediment Control Measures (Policy WR-P42), Storm Drainage Design Standards (Policy WR-P43), Storm Drainage Impact Reduction (Policy WR-P44), and Reduce Toxic Runoff (Policy WR-P45). No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

a) Physically divide an established community?

No Impact: The proposed Project would not divide an existing neighborhood or community. The Project's long-lasting repairs to Lighthouse Road would enhance community connectivity and safety. Traffic control would be necessary during construction, but a single travel lane would be maintained through the construction site. However, short closures less than an hour may be needed during infrequent equipment/material deliveries and/or road construction during the project. No impact would result.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact: The Project is located within the existing Humboldt County Right of Way, and the Coastal Zone. The Project will not result in a change of land use or conflict with any policies or regulations outlined by the Coastal Commission or the County. No impact would result.

3.12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Less than Significant: The Project would require minor use of rock, gravel, sand, and other similar materials, but is not expected to have any significant impact on locally available minerals or mineral resources valuable to the region or the State. Additionally, the Project Area is also not designated by the Humboldt County General Plan, or other local land use plan as having locally important mineral resources within the Project Area (Humboldt County 2017). The impact would be less than significant.

3.13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Result in generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Existing noise conditions in the Project area consist of regular vehicle traffic on Lighthouse Road. There is one sensitive receptor 1,700 feet from the Project area, and an elementary school approximately 4 miles away.

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant: Project construction is expected to occur from 7:00 a.m. to 7 p.m. Monday through Friday for approximately 120 days per year for two years beginning in 2024. Activities that will generate noise include operation of excavators, bulldozers, trucks, etc. The nearest permanent residence is approximately 1,700 ft from the edge of the work area where most of the noise would be produced. Using a Distance Attenuation Calculator, it is estimated that at 1,700 ft, noise levels would be about 23 dB. Currently, Humboldt County has not established construction-related noise standards that pertain to the proposed Project activities. Given that construction will occur only during daytime hours, for a limited amount of time each year and is not immediately in the vicinity of any sensitive receptors this potential impact is less than significant.

Upon completion the Project will not be a stationary source of noise. Maintenance of the Project may include repair, trash/debris removal, and vegetation management which will contribute negligible sources of noise after completion. The potential impact is less than significant.

b) Result in generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant: Project-related activities would not involve the use of explosives or other intensive construction techniques that could generate significant ground borne vibration or noise. The Project may also utilize a vibratory roller, bulldozer, excavator, backhoe and jackhammer. Noise impacts from ground borne noise to humans are anticipated to be minor.

Vibration impacts to residences are anticipated to be negligible as the closest residences are located approximately 1,700 feet away from the Project area. The primary noise and vibration effects would be related to equipment noise and would remain within typical construction equipment noise ranges. Minor vibration adjacent to mechanized equipment and road treatments during construction work would be generated only on a short-term basis. Therefore, groundborne vibration and noise would have a less than significant impact.

Following construction, operation of the Project would not result in groundborne vibration or groundborne noise consistent with current use. Project operation would not generate vibration, except in instances where larger repairs to the road might be required. These conditions would be short-term and temporary (taking from one to several weeks to complete depending on the extent of damage or other circumstances); therefore, no operational impact would result.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Project Area is located approximately 22 miles north of the Shelter Cove Airport (0Q5). The Shelter Cove Airport is covered by the 2021 Airport Land Use Compatibility Plan (ALUCP) prepared for the Humboldt County Airport Land Use Commission (ALUC) by ESA. Per the ALUCP, the Project Area is not located within the Airport Influence Areas (AIA) (ESA 2021). Given the Project is not located within two miles of a public airport and is outside the AIA, no impact would result.

3.14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
	Would the project:			
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact: The Project would not induce substantial growth in nearby areas. The Project does not involve extension of public roads. The infrastructure proposed by the Project serves to repair and maintain the safety of existing roadways and provide crucial habitat for aquatic species. No impact would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact: The Project will not displace existing housing units or residents. The construction of replacement housing would not be necessary. No impact would result.

3.15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services?

No Impact: The Project will restore the existing Lighthouse Road and private drive as well as create habitat for threatened and endangered aquatic species. This would enhance public service capabilities in the rural surrounding area. The Project would not necessitate any related new or altered public service facilities. The Project would not result in an increase in student population, and therefore, no new or expanded schools would be required. Overall, there will be no impact.

3.16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact: The Project proposes no new recreational amenity within Humboldt County. The road would provide improved access for residents of Lighthouse Road and Prosper Ridge and recreators that utilize the north end of the Lost Coast Trail and Mattole Beach. The proposed road would not increase transportation between the area but would make it safer for users to travel throughout the region. The Project also does not include, or impede, access to recreation. The Project also enhances habitat in the lower Bear Creek drainage and Mattole Middle Slough and will not result in an increased use of recreational facilities. No impact would result.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact: The Project would not create, or utilize, or require construction of any recreational facility. As discussed above, the proposed road would improve safety and create habitat for aquatic species. No impact would result.

3.17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?

Less than Significant: Lighthouse Road serves as the primary thoroughfare for visitors to the Mattole Beach and local residents of the area and Prosper Ridge. In addition to enhancing habitat for aquatic species, this Project will repair Lighthouse Road in areas of severe erosion which will increase connectivity and accessibility for emergency vehicles. For brief periods during construction the Project will require a temporary traffic control plan [see Section 3.9 (f)], but one lane will always be available for vehicle passage, except for very brief (less than one hour) closures. All closures associated with the Project adhere to County standards. The Project will incorporate traffic safety measures, such as stop and yield signs on the roadway and will not conflict with effective circulation system performance. The Project is consistent with multiple plans and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Based on the above, the project: (1) would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system; (2) would take into account all modes of transportation, including non-motorized travel. Therefore, a less than significant impact would occur.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant: CEQA Guidelines section 15064.3 (b) lists criteria used for analyzing transportation impacts for land use projects, transportation projects, qualitative projects and methodology. These guidelines state that transportation related projects that do not have an effect, reduce or have no impact on vehicle miles traveled (VMT) likely have a less than significant impact.

The proposed Project does not include any of the listed elements. The Project is restorative in nature and its goals are to enhance habitat for aquatic species and repair existing roadways. The Project does not include any component that could be characterized as resulting in a potential increase to VMT. Because the proposed Project would not increase the length of roadway or increase the number of travel lanes outside of historic conditions, there would be no increase in VMT. The impact would be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant: Road construction activities include raising the elevation of Lighthouse Road to accommodate the arch culvert crossing, and to raise the elevation of the private drive to accommodate the

bridge crossing. The change in elevation will be gradual and is not to exceed five feet in height. The Project will not increase hazards due to a geometric design feature – construction will follow the current footprint. The impact will be less than significant.

d) Result in inadequate emergency access?

Less than Significant: Lighthouse Road is the only thoroughfare for emergency vehicles to reach local residents of LHR, Prosper Ridge and Mattole Beach. Completion of this Project will increase accessibility for emergency vehicles. For brief periods during construction the Project will require a temporary traffic control plan [see Section 3.9 (f)], but one lane will always be available for emergency vehicle passage, except for brief (less than one hour) closures. All closures associated with the Project adhere to County standards. The Project will incorporate traffic safety measures, such as stop and yield signs on the roadway and will not conflict with effective circulation system performance. Construction would not slow or impede emergency response, therefore a less than significant impact would result.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				X
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe				X

Please see section 1.7.3 for a summary on Tribal Consultation.

a-i, a-ii) Cause a substantial adverse change in the significance of a tribal cultural resource?

No Impact: The Bear River Band of the Rohnerville Rancheria owns one of the private parcels where construction is planned to occur. Members of the BRB including a member of the Tribal Council have reviewed the Project design and are in full support of the Project. A Cultural Resources Investigation was

also completed in coordination with the BRB and did not identify any existing cultural resources. Additionally, the County provided AB 52 notification letters to representatives of the Bear River Rancheria, Sinkyone Intertribal Wilderness Council, and the Wiyot Tribe on October 20, 2022. No responses have been received to date (more than 30 days). No impact would result.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact: The proposed Project does not involve the use or construction of any facilities that would require new water, wastewater, electrical, natural gas, or telecommunications utilities. Therefore, the Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, natural gas, or telecommunications facilities. No impact will result.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact: During construction the Project will require small amounts of water (to be provided by the contractor) for dust control. Upon completion, the Project will not require any additional inputs of water, nor a need for the construction of new water facilities. No impact would result.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact: The Project does not involve sewerage facilities or wastewater treatment and would not impact existing municipal sewerage infrastructure or result in a demand increase on existing wastewater treatment capacity. No impact would result.

d, e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant: The solid waste providers in the area are Recology Eel River (Recology) and the Humboldt Waste Management Authority (HWMA). The Project is not expected to generate a significant increase of services for solid waste disposal needs. The proposed Project would generate limited solid waste during construction and no waste during operation. Construction solid waste would include the one-time temporary generation of construction waste associated with the proposed development of the road. Excess soils, aggregate road base, and construction materials would be stored within designated staging areas. Excess materials may be re-used on site for backfill and finished grading. Excess materials would not be stockpiled on-site once the project is complete. The contractor would haul additional excess materials off site for beneficial re-use, recycling, or legal disposal. Solid waste collected as a part of the Project would be disposed of via Recology or HWMA. Solid waste produced in the County is trucked to State licensed landfills located in Anderson, California and Medford, Oregon in compliance with local, State, and federal regulations pertaining to solid waste disposal. These facilities have sufficient capacity to serve the Project's solid waste disposal needs; therefore, a less than significant impact is anticipated

3.20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?		X		
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes?			X	

The Project is located within a State Responsibility Area (SRA) rated as a very high Fire Hazard Severity Zone (FHSZ) (CAL FIRE 2007). CAL FIRE serves the Project Area located within the SRA. The closest fire station to the Project Area is the Petrolia Fire Station located approximately 5 miles northeast of the Project.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant: A review of the Humboldt County EOP (Humboldt County 2015) and the Tsunami Inundation Map for Emergency Planning – County of Humboldt (CGS 2021) indicates that the Project would not permanently impair emergency response activities nor established evacuation routes. The Project operation would not impair implementation or physically interfere with an established emergency response or evacuation plan; see Section 3.9 [Hazards and Hazardous Materials, Impact (f)] for discussion of the Project's effect on emergency response and evacuation plans. Once constructed, the Project would enhance transportation along Lighthouse Road, thus emergency response or evacuation would not be impeded. The Project would not permanently impede access to any existing roads or pedestrian ways within the Project Area. A less than significant impact would result.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant with Mitigation Incorporated: The Project area is located in a rural area with existing road footprints and adjacent to the Mattole River. The topography within the Project Area is moderately sloped with upper channel slopes often exceeding 10 percent, before draining onto the Mattole River floodplain with very minimal slope. The Project area is primarily dominated by riparian vegetation, with adjacent Douglas fir forest. The vegetated portions could be susceptible to wildfire during Project construction or operation, as a result of accidental ignition. The Project area is located within a State Responsibility Area (SRA) rated as a very high Fire Hazard Severity Zone (FHSZ) (CAL FIRE 2007) therefore, mitigation measures will be implemented to reduce the potential risk of wildfire and potential exposure of pollutants to less than significant.

Mitigation Measure FIRE-1: Minimize Risks of Wildfire

- During construction, all hazardous materials and construction equipment would be appropriately used and stored pursuant to applicable regulations. During operation, the Project would not house any pollutants within the Project Area that may be released if a wildfire occurred.

- Firefighting equipment (bulldozer, excavator, fire extinguishers, and hand tools) will be on site during construction. The project is adjacent to the Mattole River, which could be available for use by helicopter or ground-based firefighting efforts.

- Contractor shall ensure that vehicles and machinery are not parked in tall grass or any other location where heat from the exhaust system could ignite a fire.

Due to the temporary nature of construction, the minimal amount of hazardous materials anticipated to be stored during the construction phase, given that the Project does not include any structures to be used for human occupancy and by implementing Mitigation Measure **FIRE-1** the Project would not exacerbate wildfire risks and thereby expose users to pollutants. A less than significant impact would result.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact: Development of the Project would not result in a need to expand infrastructure to the Project Area or in the immediate vicinity of the Project. New roads for fire defense, expanded water sources, or new power lines would not be required. No impact would result.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant: Following a wildfire, erosion within the Project Area could occur due to the loss of vegetation but would be limited. The purpose of the Project is to stabilize Lighthouse Road and the private drive and redirect potential flood flows to minimize erosion from flooding. Any potential impact would be less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			X	

a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant with Mitigation Incorporated: As evaluated in this IS/MND, the Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. Mitigation measures are listed herein to reduce impacts related to air quality, energy, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water, and wildfire. With implementation of the required mitigation measures, impacts would be less than significant.

b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant: Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. As discussed in Section 3.11 (Land Use and Planning), the Project is consistent with the Humboldt County General Plan. The Project will create necessary habitat for aquatic species, enhance previously completed restoration work in the Middle Slough and improve the safety and longevity of Lighthouse Road.

The impacts associated with the proposed Project analyzed in this IS/MND would not add appreciably to any existing or foreseeable future significant cumulative impact, such as visual quality, cultural resources, biological, traffic impacts, or air quality degradation. Incremental impacts, if any, would be negligible and undetectable. Any applicable cumulative impacts to which this Project would contribute would be mitigated to a less than significant level. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant. Because the proposed Project would not result in significant impacts after mitigation, and because the proposed Project is habitat focused and will not add to existing and future population growth and development in the area, the proposed Project would not contribute to any significant cumulative impacts which may occur in the area in the future. Therefore, the impact would be less than significant.

c) Have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant: The Project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section 3 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings. The impact would be less than significant.

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Appendix A – Figures

Figure 3 – Culvert Design
Figure 4 – Bridge Design
Figure 5 – Dewatering Plan

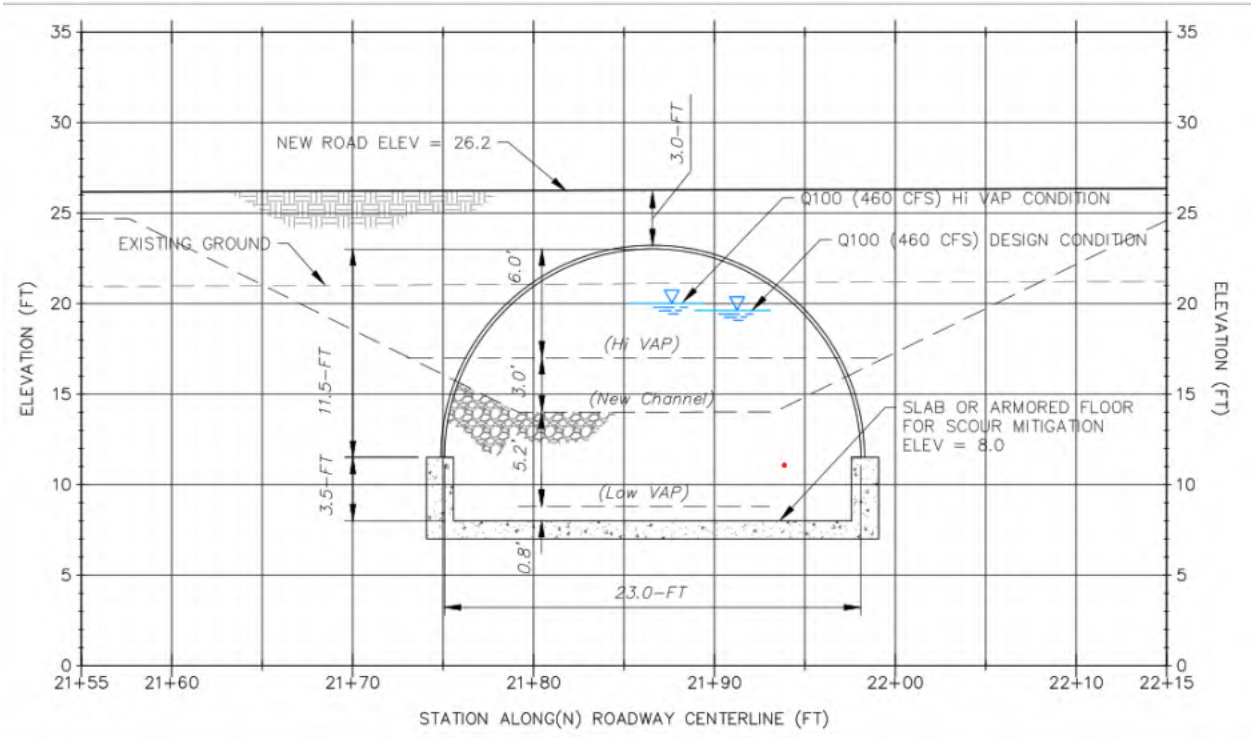


Figure 3. Culvert design cross section for Lower Bear Creek crossing at Lighthouse Road. Michael Love & Associates, 2022.

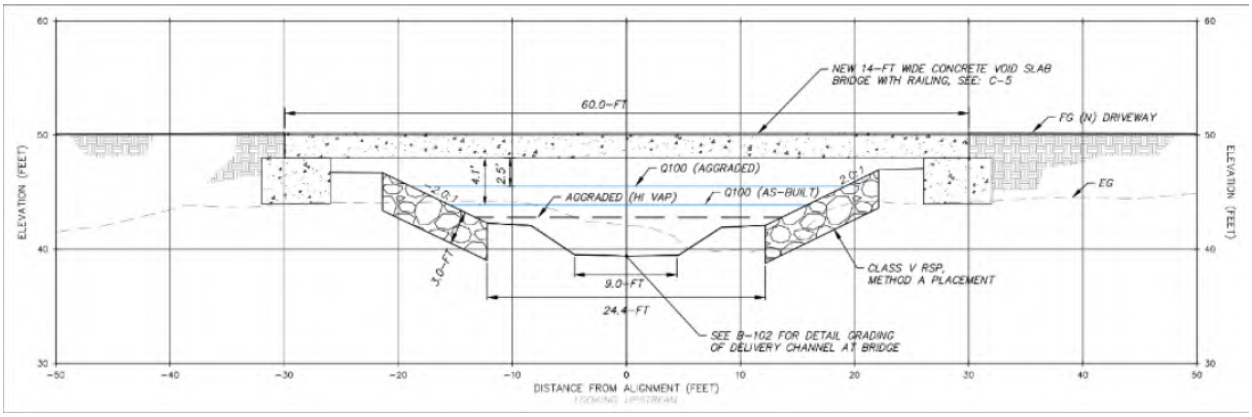
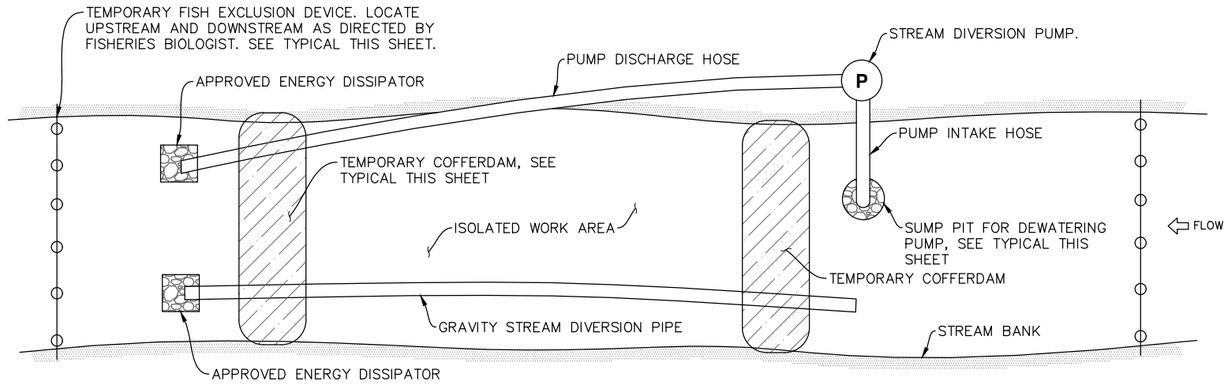
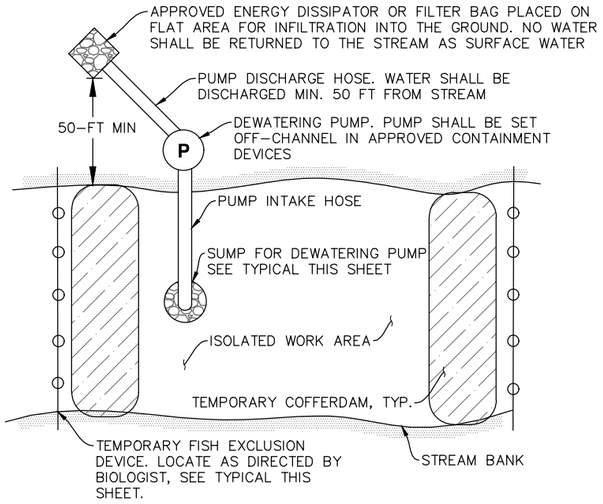


Figure 3. Bridge design cross section for Lower Bear Creek crossing at private drive. Michael Love & Associates, 2022.



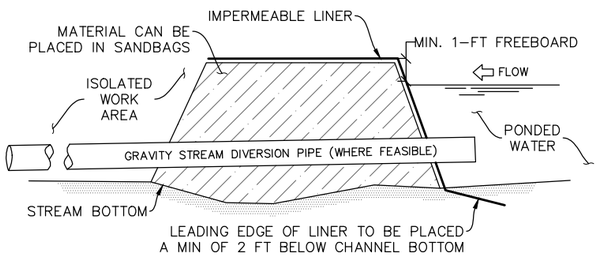
TEMPORARY CLEAR WATER DIVERSION

TYPICAL PLAN (NTS)



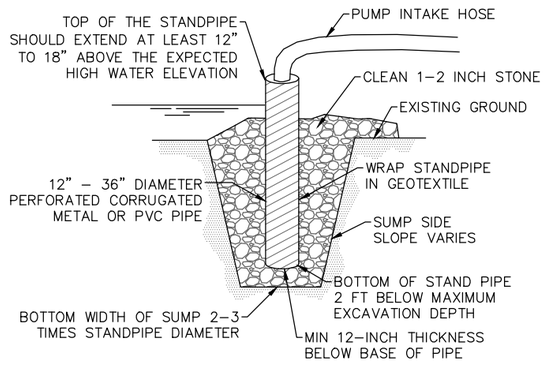
TEMPORARY NUISANCE AND DEWATERING MEASURES

TYPICAL PLAN (NTS)



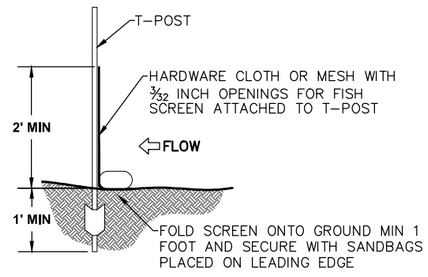
TEMPORARY COFFERDAM

TYPICAL PROFILE (NTS)



SUMP PIT

TYPICAL SECTION (NTS)



TEMPORARY FISH EXCLUSION DEVICE

TYPICAL PROFILE (NTS)

1 TYP **WATER MANAGEMENT**

TYPICAL

WATER MANAGEMENT

GENERAL

1. THE WATER MANAGEMENT FEATURES (E.G. COFFERDAMS) SHOWN IN THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL DESIGN A WATER MANAGEMENT APPROACH THAT MEETS ALL PERMIT AND OTHER CONSTRAINTS.
2. WATER MANAGEMENT SHALL INCLUDE THE EXISTING ALIGNMENT OF HOTELLING GULCH (EAST FORK).
3. THE OBJECTIVE OF WATER MANAGEMENT IS TO ISOLATE THE CHANNEL WORK SO THAT WORK IS COMPLETED IN DRY CONDITIONS. TO ACCOMPLISH THIS, THE CONTRACTOR MUST EMPLOY A CLEAR WATER DIVERSION SYSTEM AND A DEWATERING SYSTEM. THE CLEAR WATER DIVERSION SYSTEM BYPASSES CREEK WATER AROUND THE WORK AREA. THE DEWATERING SYSTEM REMOVES "NUISANCE" WATER (E.G. SEEPAGE) FROM WITHIN THE ISOLATED WORK AREA AND IS TREATED TO REMOVE SEDIMENT.
4. NO CONSTRUCTION ACTIVITIES ARE PERMITTED UNTIL A WATER MANAGEMENT PLAN HAS BEEN ACCEPTED.
5. FISH REMOVAL WILL BE CONDUCTED BY A BIOLOGIST PROVIDED BY THE CO. CONTRACTOR SHALL COORDINATE WITH BIOLOGIST DURING PLANNING AND IMPLEMENTATION OF DIVERSION AND DEWATERING ACTIVITIES.

PRODUCTS

COFFERDAM

1. MAY BE CONSTRUCTED USING NATIVE OR IMPORTED MATERIAL PLACED IN BAGS (E.G. SAND BAGS, SUPERSACKS). NO COFFERDAM MATERIAL MAY BE RELEASED TO THE CHANNEL AT THE COMPLETION OF THE CONSTRUCTION WITHOUT APPROVAL.
2. COFFERDAMS SHALL NOT BE OVERTOPPED.

CLEAR WATER DIVERSION SYSTEM

1. GRAVITY SYSTEM IS PREFERRED. SYSTEM SHALL BE CAPABLE OF CONVEYING ALL OF THE STREAM FLOW, 24-HOURS PER DAY UNTIL AREA IS STABILIZED.
2. THE PIPE MATERIAL SHALL BE SELECTED FOR FLEXIBILITY AND DURABILITY TO ALLOW FOR THE OCCASIONAL RELOCATION DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL USE RESTRAINED PIPE JOINTS OR USE FITTINGS AND COUPLINGS THAT PREVENT SEPARATION OF PIPES.
4. THE CONTRACTOR HAS THE OPTION TO USE PUMPING INSTEAD OF GRAVITY FOR THE CLEAR WATER DIVERSION, BUT GRAVITY IS PREFERRED. IF GRAVITY IS NOT UTILIZED, PRESENT REASONS WITHIN THE WATER MANAGEMENT PLAN.
5. THE PUMP AND PUMPING APPARATUS USED FOR THE CLEAR WATER DIVERSION SHALL BE OF SUFFICIENT CAPACITY TO PUMP ALL THE STREAM FLOW ON A 24-HOUR BASIS.
6. THE CONTRACTOR SHALL PROVIDE BACKUP POWER AND PUMPING EQUIPMENT TO ASSURE THAT THE CLEAR WATER DIVERSION REMAINS FUNCTIONAL THROUGHOUT THE TIME PERIOD THAT THE CHANNEL IS ISOLATED.

DEWATERING SYSTEM

1. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, TOOLS, EQUIPMENT, FACILITIES AND SERVICES AS REQUIRED FOR PROVIDING THE NECESSARY DEWATERING WORK AND FACILITIES, AND PROVIDE BACKUP EQUIPMENT AS NECESSARY FOR REPLACEMENT AND FOR UNANTICIPATED EMERGENCIES.
2. NUISANCE WATER IS WATER WITHIN THE ISOLATED WORK AREA.
3. WATER REMOVED DURING DEWATERING SHALL NOT BE RETURNED DIRECTLY TO SURFACE WATERS AND SHALL BE TREATED IN ACCORDANCE WITH PERMITS.
4. REMOVAL OF NUISANCE WATER SHALL BE OPERATED 24-HOURS PER DAY TO MAINTAIN SUITABLE CONDITIONS IN THE WORK AREA, UNLESS APPROVED BY COR.
5. GAS PUMPS SHALL BE SET IN APPROVED CONTAINMENT DEVICES.

EXECUTION

1. NO WORK MAY BEGIN UNTIL THE CONTRACTOR'S WATER MANAGEMENT PLAN HAS BEEN APPROVED.
2. PRIOR TO ANY INSTALLATION OF WATER MANAGEMENT FACILITIES, THE FISH REMOVAL WORK MUST BE COMPLETED.
3. INSTALL WATER MANAGEMENT SYSTEMS PER THE APPROVED WATER MANAGEMENT PLAN.
4. REFER TO CONTRACT DRAWINGS FOR ADDITIONAL INFORMATION.
5. ONCE THE IN-CHANNEL WORK IS COMPLETED AND ACCEPTED, REMOVE WATER MANAGEMENT SYSTEMS PER THE APPROVED WATER MANAGEMENT PLAN AND AS DIRECTED.

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FISH AND AQUATIC ORGANISM MANAGEMENT

GENERAL

1. THE PROJECT AREA WILL LIKELY INCLUDE FISH AND OTHER AQUATIC SPECIES THAT NEED TO BE REMOVED PRIOR TO ANY IN-CHANNEL WORK, INCLUDING THE INSTALLATION OF WATER MANAGEMENT SYSTEMS. THE CONTRACTOR SHALL WORK WITH THE CONTRACT OWNER'S BIOLOGIST TO COORDINATE THE REMOVAL OF FISH AND OTHER SPECIES.
2. NO WORK MAY BE COMPLETED UNTIL THE WATER MANAGEMENT PLAN HAS BEEN APPROVED.

PRODUCTS

1. TEMPORARY FISH EXCLUSION DEVICE AS SPECIFIED.

EXECUTION

1. THE CONTRACTOR MUST COORDINATE WITH THE CONTRACT OWNER AND THEIR BIOLOGIST. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONTRACT OWNER AT LEAST ONE WEEK PRIOR TO NEEDING THE BIOLOGIST'S SERVICES.

Michael Love & Associates, Inc.
PO Box 4477 • Arcata, CA 95518 • (707) 822-2411
Mattole Salmon Group
PO BOX 188
Petrolia CA 95558

VERIFY SCALE
THIS BAR IS ONE INCH LONG AT FULL SCALE

Mattole Salmon Group
LOWER BEAR CREEK SLOUGH ENHANCEMENT PROJECT

WATER MANAGEMENT DETAILS

DATE	
SUBMITTAL	MAY 2022
DESIGN	65% DESIGN
DRAWN	AL / ML
SHEET	AL
	30 of 31
	G-100

Appendix B – Mitigation, Monitoring and Reporting Program

Mitigation, Monitoring and Reporting Program (MMRP)

CEQA, Section 21081.6 requires that a mitigation, monitoring and reporting program (MMRP) be adopted to ensure that mitigation measures are outlined and implemented. The MMRP specifies the environmental resource potentially impacted by the project, what the mitigation measures are to reduce significant impact, the entity responsible for each measure and when during the process it should be completed. Additionally, there is a column that will be filled out as each measure is completed. This MMRP addresses the Mattole Salmon Group's Lower Bear Creek Habitat Enhancement Project and is designed to ensure compliance with Public Resources Code 21081.6 during implementation. The proposed project is located in rural Humboldt County; the County of Humboldt Public Works Department is the Lead Agency under CEQA and has discretionary authority over the proposed project.

Mitigation Measure Number	Mitigation Measure	Monitoring, Enforcement and Reporting Responsibility	Implementation Timeframe	Compliance Record/Date
3.3 Air Quality				
AQ-1	**BMPs to Reduce PM_{10}:** - Any surfaces with exposed soil (e.g. staging areas, access roads, graded surfaces, excavation sites) will be watered at least once per day or as needed for dust suppression. - Construction vehicles will not exceed speeds of 15 miles per hour on unpaved roads. - Construction vehicles will work to minimize idling times of all vehicles and machinery	MSG, Construction contractor	During Construction	
3.4 Biological Resources				
BIO-1	**Protect Migratory, Special Status and Nesting Birds:** - There will be no night work or artificial lighting in the Project area. - Vegetation clearing shall occur outside the bird nesting season (Feb 1 to September 15). If vegetation removal occurs outside the bird nesting season, no further mitigation is necessary. If vegetation removal or construction work occur adjacent to suitable nesting habitat between February 1 and September 15, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the Project at minimum one-day pre-construction survey within the 7-day period prior to vegetation removal and ground-disturbing activities. - If active nests are detected within the construction footprint or up to 500 feet from construction activities, the ornithologist shall flag a buffer around each nest (assuming property access). Construction activities shall avoid nest sites until the ornithologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed (buffer size	Mattole Salmon Group (MSG), Construction contractor	24 hours prior to construction, during construction	

	dependent on species). In general, the buffer size for common species will be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds. An absolute minimum buffer size of 30 feet is recommended as a starting point of discussion for common species, with larger buffers expected for special status species and raptors. - If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.			
BIO-2	**Protect Special Status Amphibians and Reptiles:** - By design, the Project will minimize disturbance in the wetted channel to the greatest extent possible. - No wetted channel construction activities will occur during the wet season when they would have the potential to impact sensitive amphibians and reptiles. - Contractors will minimize the potential for sediment runoff into Bear Creek and the Mattole River from on-site erosion by implementing BMPs related to sediment runoff.	MSG, Construction contractor	24 hours prior to construction, during construction	

	At the close of construction any disturbed areas will be revegetated with native plants and mulched. - A maximum of 24-hours prior to the start of construction, a qualified biologist will survey any portion of the wetted channel that falls within the Project footprint prior to the start of disturbance activities to detect and relocate amphibians and reptiles of conservation concern. The biologist will move any fish or amphibians that may be in work sites to suitable habitat outside of the Project footprint. The frequency of the need to re-survey will depend on survey results, duration of disturbance activities, weather conditions post-survey that may influence amphibian movement, and the timing of foothill yellow-legged frog movements into Bear creek form the lower Mattole River.			
BIO-3	**Protect Special Status Fish Species:** - The Mattole Salmon Group will initiate a formal consultation with National Marine Fisheries Service (NMFS) Section 7 of the Endangered Species Act (ESA). - Contractor shall thoroughly clean heavy equipment that will be in the stream channel. Prior to construction all heavy equipment will be inspected thoroughly for oil and fuel leaks and inspected routinely throughout the construction period. Refueling or oiling of any machinery will occur only within the staging area and with proper materials immediately available for spill cleanup. Contractor will develop and implement site-specific BMPs to minimize the risk of hazardous material contamination. Fuels and lubricants shall not be stored at the Project site after hours or on the weekends. - In the event of a spill, the local CDFW office shall be notified and consulted regarding clean-up procedures. Large spills should also be reported to the Office of Spill Prevention and Response, 1700 K Street, Suite 250 Sacramento, CA 95811, or report oil spills to 800-852-7550 or 800-OILS-91 - Instream construction will be limited to June 15 – October 31 to avoid working during wet season conditions. This specific timeframe will allow time for young-of-the-year salmonids to be mobile and decrease their risk to injury, allow downstream migration of smolts to be completed prior to channel disturbance and avoid construction during the rainy season when adult salmonids are entering freshwater to spawn. Construction activities will cease before October 31 with the presence of rain.	MSG, Construction contractor	Prior to construction, during construction	

	- A qualified biologist or Project partner will implement a fish screen capable of precluding movement of aquatic amphibians, fish and reptiles into the active areas of excavation or soil disturbance in the Bear Creek channel and check routinely throughout project duration to ensure proper function. The project will follow the Fish Screening Criteria for Salmonids (NMFS 1997), NOAA Restoration Center/Army Corps of Engineers programmatic biological opinion requirements. The fish screen should be check at a minimum of 2 times per week to ensure proper function by a qualified biologist. - No Project activities will allow the use of pesticides, herbicides, or rodenticides.			
BIO-4	**Protect S3 Vegetation Association:** - Project contractor will ensure that the minimum amount of vegetation will be cleared in order to carry out project activities such as staging and road building. - To ensure that the spread or introduction of invasive plants is avoided to the maximum extent possible, equipment shall be cleaned thoroughly of all dirt, mud and plant material prior to entering the work site. When feasible, invasive plants at the work site will be removed. - There will be no use of herbicide in or around the Project area. - Disturbed areas will be fully restored upon completion of construction. Cleared areas will be revegetated with native species, including species present in the S3 vegetation association. Planting techniques will follow guidelines put forth in Part XI of the California Stream Habitat Restoration Manual, including a 2:1 ratio (two individuals planted for every one removed) and an appropriate planting time frame (after December 1, or when sufficient rainfall has occurred, but in no case after April 1) to maximize seedling survival.	MSG, Construction contractor	During construction	
BIO-5	**Protect One- and Three-Parameter Wetland Habitat:**	MSG, Construction contractor	Prior to construction, during construction	

	Project design will limit filling wetlands with dredged or fill material to the greatest extent possible. In cases where this cannot be avoided, the following mitigation measures will ensure minimal impact to wetlands in the Project area. - Prior to construction activities, the Project will obtain a USACE permit under Section 404 of the Clean Water Act, and a NCRWQCB permit under Section 401 of the Clean Water Act. The Project will also obtain a Lake and Streambed Alteration Agreement from CDFW prior to construction. - A thorough dewatering plan will be developed by the Mattole Salmon Group and the contractor and presented to regulatory agencies for review and acceptance at least 15 days prior to construction. - Staging and stockpiling areas will be at least 100 feet from any existing wetlands, and appropriate erosion control BMPs (silt fences, fiber rolls) will be installed between the staging areas and work zones to minimize any sediment runoff into wetlands. Any stockpiles expected to remain onsite throughout the rainy season will be properly protected from rain and wind by using tarps, silt fences, mulch and straw bales. - Areas disturbed by Project activities will be thoroughly revegetated and mulched upon Project completion so as not to cause any erosion. - Refueling of equipment will not occur within 100 feet of any wetland area. - Any monitoring, maintenance, and reporting required by the regulatory agencies (i.e., USACE, Regional Board, and CDFW) shall be implemented and completed pursuant to established criteria and/or schedules. All measures contained in Project permits or associated with agency approvals shall be implemented in a timely manner.			
3.5 Cultural Resources				
CR-1	**Inadvertent Discovery of Archaeological Material:** Prior to construction, a meeting shall be held with field contractors, where the protocols for inadvertent discovery (described in CR-2) will be communicated. If cultural materials for example: chipped or ground stone, historic debris, building foundations, or bone are	MSG, Construction contractor	Prior to construction, during construction	

	discovered during ground-disturbance activities, work shall be stopped within 66 feet of the discovery, per the requirements of CEQA (Revised Guidelines, Title 14 CCR 15064.5 (f)). Work near the archaeological finds shall not resume until a professional archaeologist, who meets the Secretary of the Interior's Standards and Guidelines, has evaluated the materials and offered recommendations for further action. Tribal representatives shall be notified. Implementation of Mitigation Measure CR-1 would reduce the potential impacts to a less than significant level during construction because a plan would be implemented to address discovery of unanticipated archaeological resources and to preserve and/or record those resources consistent with appropriate laws and requirements.			
CR-2	**Inadvertent Discovery of Human Remains:** If human remains are discovered during project construction, work will stop at the discovery location, within 66 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner will be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The Coroner will contact the NAHC. The descendants or most likely descendants of the deceased will be contacted, and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.	MSG, Construction contractor	During construction	
3.6 Energy				
AQ-1	**BMPs to Reduce PM_{10}:** See above	MSG, Construction contractor	During construction	
3.7 Geology and Soils				
GEO-1	**Erosion Control:** - Construction will occur in late summer when flows are at their lowest and chances of precipitation are minimal. Heavy machinery will not be excessively operated in wetted channels.	MSG, Construction contractor	During construction, post-construction	

	- Stockpiling and staging areas will be isolated from the Project area by using silt fences, mulching, straw bales. - Disturbed areas will be revegetated with native plants and mulched to prevent loss of topsoil.			
GEO-2	**Inadvertent Discovery of Paleontological Remains:** If paleontological remains such as bones, teeth or fossils are discovered during construction activities will be required to give the site a 50-foot buffer and a professional paleontologist will be notified to document the discovery, evaluate the potential resource and determine its significance. The paleontologist will determine if work can continue in the area without further damaging the resource or recommend salvage of the resource. Any fossils collected from the area will be deposited in an accredited scientific institution where they will be properly curated and preserved.	MSG. Construction contractor	During construction	
3.9 Hazards and Hazardous Materials				
BIO-5	**Protect One- and Three-Parameter Wetland Habitat:** See above	MSG, Construction contractor	Prior to construction, during construction	
3.10 Hydrology and Water Quality				
BIO-2, BIO-3, BIO-5, GEO-1	**Protect Special Status Amphibians and Reptiles:** See above **Protect Special Status Fish Species:** See above **Protect One- and Three-Parameter Wetland Habitat**: See above **Erosion Control:** See above	MSG, Construction contractor	Prior to construction, during construction	
3.20 Wildfire				
FIRE-1	**Minimize Risks of Wildfire:** - During construction, all hazardous materials and construction equipment would be appropriately used and stored pursuant to applicable regulations. During operation, the Project would not house any pollutants within the Project Area that may be released if a wildfire occurred.	Construction contractor	During construction	

	- Firefighting equipment (bulldozer, excavator, fire extinguishers, and hand tools) will be on site during construction. The project is adjacent to the Mattole River, which could be available for use by helicopter or ground-based firefighting efforts. - Contractor shall ensure that vehicles and machinery are not parked in tall grass or any other location where heat from the exhaust system could ignite a fire.			

Exhibit 4: IS/MND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Lower Bear Creek Habitat Enhancement

North Coast Air Basin, Annual

Appendix C –

CalEEMod Modeling Information and Results

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SCMND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Residential	1.00	Dwelling Unit	0.00	0.00	3

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	93
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Project involves channel realignment, raising County road and private drive, re-excavating lower Bear Creek channel.

Off-road Equipment - Construction crew will have two excavators.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Total of 4.3 graded acres. Material needed for grading is expected to be generated from excavation.

Trips and VMT - Crew will be residing near the project site for the duration of the project. No hauling will be required.

On-road Fugitive Dust - Paving is not a part of this project

Vehicle Trips - Area is defined as rural residential. Residential dwellings are not part of this project.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Road Dust - Paving is not in project design.

Woodstoves - Restoration project area is defined as rural residential with no dwellings.

Consumer Products -

Area Coating -

Water And Wastewater - Restoration project does not include wastewater

Solid Waste - Restoration project does not generate solid waste

Mobile Land Use Mitigation -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	0.00	25.00
tblConstructionPhase	NumDays	0.00	25.00
tblConstructionPhase	NumDays	0.00	35.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	50.00
tblConstructionPhase	NumDays	0.00	20.00
tblConstructionPhase	PhaseEndDate	6/16/2024	10/31/2025
tblConstructionPhase	PhaseEndDate	6/16/2024	7/18/2025
tblConstructionPhase	PhaseEndDate	6/16/2024	8/2/2024
tblConstructionPhase	PhaseEndDate	6/16/2024	10/31/2024
tblConstructionPhase	PhaseEndDate	6/16/2024	9/26/2025
tblConstructionPhase	PhaseEndDate	6/16/2024	8/30/2024
tblConstructionPhase	PhaseStartDate	6/17/2024	9/29/2025
tblConstructionPhase	PhaseStartDate	6/17/2024	6/16/2025
tblConstructionPhase	PhaseStartDate	6/17/2024	9/2/2024
tblConstructionPhase	PhaseStartDate	6/17/2024	7/21/2025
tblConstructionPhase	PhaseStartDate	6/17/2024	8/5/2024
tblGrading	AcresOfGrading	10.00	2.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblGrading	AcresOfGrading	25.00	2.30
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0240	0.1897	0.3560			8.5400e-003	1.5822									
2025	0.0129	0.1174	0.1277			4.2900e-003	1.2503									
Maximum	**0.0240**	**0.1897**	**0.3560**			**8.5400e-003**	**1.5822**									

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SCAQMD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0240	0.1897	0.3560			8.5400e-003	1.5822									
2025	0.0129	0.1174	0.1277			4.2900e-003	1.2503									
Maximum	**0.0240**	**0.1897**	**0.3560**			**8.5400e-003**	**1.5822**									

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SMND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-17-2024**	**9-16-2024**	0.1454	0.1454
2	**9-17-2024**	**12-16-2024**	0.0582	0.0582
4	**3-17-2025**	**6-16-2025**	0.0010	0.0010
5	**6-17-2025**	**9-16-2025**	0.1108	0.1108
6	**9-17-2025**	**9-30-2025**	0.0135	0.0135
		Highest	0.1454	0.1454

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0630	1.3100e-003	0.0849			0.0109	0.0109									
Energy	0.0000	0.0000	0.0000			0.0000	0.0000									
Mobile	0.0000	0.0000	0.0000			0.0000	0.0000									
Waste						0.0000	0.0000									
Water						0.0000	0.0000									
Total	**0.0630**	**1.3100e-003**	**0.0849**			**0.0109**	**0.0109**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0630	1.3100e-003	0.0849			0.0109	0.0109									
Energy	0.0000	0.0000	0.0000			0.0000	0.0000									
Mobile	0.0000	0.0000	0.0000			0.0000	0.0000									
Waste						0.0000	0.0000									
Water						0.0000	0.0000									
Total	**0.0630**	**1.3100e-003**	**0.0849**			**0.0109**	**0.0109**									

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation I	Site Preparation	6/17/2024	8/2/2024	5	35	Prepare site, stockpile materials, clear vegetation
2	Grading I	Grading	8/5/2024	8/30/2024	5	20	Realign private driveway, reexcavate channel

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3	Bridge Construction	Building Construction	9/2/2024	10/31/2024	5	44	Construct bridge on private drivewau
4	Site Preparation II	Site Preparation	6/16/2025	7/18/2025	5	25	Prepare site, stockpile materials, clear vegetation
5	Grading II	Grading	7/21/2025	9/26/2025	5	50	Raise Lighthouse Road, reexcavate channel
6	Culvert Placement	Building Construction	9/29/2025	10/31/2025	5	25	Place culvert

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation I	Excavators	2	8.00	158	0.38
Grading I	Excavators	2	8.00	158	0.38
Grading I	Graders	1	8.00	187	0.41
Bridge Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Bridge Construction	Excavators	2	8.00	158	0.38
Site Preparation II	Excavators	2	8.00	158	0.38
Grading II	Graders	1	8.00	187	0.41
Culvert Placement		0		158	0.38
Culvert Placement		0			

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation I	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Grading I	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Bridge Construction	3	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation II	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading II	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Culvert Placement	0	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation I - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0000									
Off-Road	6.3100e-003	0.0491	0.1143			2.4200e-003	2.4200e-003									
Total	**6.3100e-003**	**0.0491**	**0.1143**			**2.4200e-003**	**2.4200e-003**									

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SJVAPCD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	5.7000e-004	3.8000e-004	3.9000e-003			1.0000e-005	0.7261									
Total	**5.7000e-004**	**3.8000e-004**	**3.9000e-003**			**1.0000e-005**	**0.7261**									

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0000									
Off-Road	6.3100e-003	0.0491	0.1143			2.4200e-003	2.4200e-003									
Total	**6.3100e-003**	**0.0491**	**0.1143**			**2.4200e-003**	**2.4200e-003**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	5.7000e-004	3.8000e-004	3.9000e-003			1.0000e-005	0.7261									
Total	**5.7000e-004**	**3.8000e-004**	**3.9000e-003**			**1.0000e-005**	**0.7261**									

3.3 Grading I - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0600e-003									
Off-Road	7.1600e-003	0.0696	0.0821			2.7300e-003	2.7300e-003									
Total	**7.1600e-003**	**0.0696**	**0.0821**			**2.7300e-003**	**3.7900e-003**									

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Exhibit 4: SCAQMD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	5.2000e-004	3.5000e-004	3.5700e-003			1.0000e-005	0.6639									
Total	**5.2000e-004**	**3.5000e-004**	**3.5700e-003**			**1.0000e-005**	**0.6639**									

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.0600e-003									
Off-Road	7.1600e-003	0.0696	0.0821			2.7300e-003	2.7300e-003									
Total	**7.1600e-003**	**0.0696**	**0.0821**			**2.7300e-003**	**3.7900e-003**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	5.2000e-004	3.5000e-004	3.5700e-003			1.0000e-005	0.6639									
Total	**5.2000e-004**	**3.5000e-004**	**3.5700e-003**			**1.0000e-005**	**0.6639**									

3.4 Bridge Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2600e-003	0.0701	0.1512			3.3700e-003	3.3700e-003									
Total	**9.2600e-003**	**0.0701**	**0.1512**			**3.3700e-003**	**3.3700e-003**									

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Exhibit 4: SCAQMD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	1.4000e-004	1.0000e-004	9.8000e-004			0.0000	0.1826									
Total	**1.4000e-004**	**1.0000e-004**	**9.8000e-004**			**0.0000**	**0.1826**									

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2600e-003	0.0701	0.1512			3.3700e-003	3.3700e-003									
Total	**9.2600e-003**	**0.0701**	**0.1512**			**3.3700e-003**	**3.3700e-003**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	1.4000e-004	1.0000e-004	9.8000e-004			0.0000	0.1826									
Total	**1.4000e-004**	**1.0000e-004**	**9.8000e-004**			**0.0000**	**0.1826**									

3.5 Site Preparation II - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0000									
Off-Road	4.2000e-003	0.0307	0.0819			1.5000e-003	1.5000e-003									
Total	**4.2000e-003**	**0.0307**	**0.0819**			**1.5000e-003**	**1.5000e-003**									

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Exhibit 4: SJVAPCD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	3.8000e-004	2.4000e-004	2.5500e-003			0.0000	0.5187									
Total	**3.8000e-004**	**2.4000e-004**	**2.5500e-003**			**0.0000**	**0.5187**									

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	0.0000									
Off-Road	4.2000e-003	0.0307	0.0819			1.5000e-003	1.5000e-003									
Total	**4.2000e-003**	**0.0307**	**0.0819**			**1.5000e-003**	**1.5000e-003**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	3.8000e-004	2.4000e-004	2.5500e-003			0.0000	0.5187									
Total	**3.8000e-004**	**2.4000e-004**	**2.5500e-003**			**0.0000**	**0.5187**									

3.6 Grading II - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.2200e-003									
Off-Road	7.7500e-003	0.0861	0.0397			2.7700e-003	2.7700e-003									
Total	**7.7500e-003**	**0.0861**	**0.0397**			**2.7700e-003**	**3.9900e-003**									

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: IS/MND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	4.6000e-004	2.9000e-004	3.0600e-003			1.0000e-005	0.6224									
Total	**4.6000e-004**	**2.9000e-004**	**3.0600e-003**			**1.0000e-005**	**0.6224**									

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust						0.0000	1.2200e-003									
Off-Road	7.7500e-003	0.0861	0.0397			2.7700e-003	2.7700e-003									
Total	**7.7500e-003**	**0.0861**	**0.0397**			**2.7700e-003**	**3.9900e-003**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	4.6000e-004	2.9000e-004	3.0600e-003			1.0000e-005	0.6224									
Total	**4.6000e-004**	**2.9000e-004**	**3.0600e-003**			**1.0000e-005**	**0.6224**									

3.7 Culvert Placement - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	8.0000e-005	5.0000e-005	5.1000e-004			0.0000	0.1037									
Total	**8.0000e-005**	**5.0000e-005**	**5.1000e-004**			**0.0000**	**0.1037**									

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SJVAPCD

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000			0.0000	0.0000									
Vendor	0.0000	0.0000	0.0000			0.0000	0.0000									
Worker	8.0000e-005	5.0000e-005	5.1000e-004			0.0000	0.1037									
Total	**8.0000e-005**	**5.0000e-005**	**5.1000e-004**			**0.0000**	**0.1037**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000			0.0000	0.0000									
Unmitigated	0.0000	0.0000	0.0000			0.0000	0.0000									

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Residential	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Residential	16.80	7.10	7.90	42.30	19.60	38.10	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

User Defined Residential	0.468989	0.066716	0.199622	0.149202	0.049639	0.009795	0.007015	0.009620	0.000731	0.000208	0.032721	0.001174	0.004569

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000									
Electricity Unmitigated						0.0000	0.0000									
NaturalGas Mitigated	0.0000	0.0000	0.0000			0.0000	0.0000									
NaturalGas Unmitigated	0.0000	0.0000	0.0000			0.0000	0.0000									

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: IS/MND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Residential	0	0.0000	0.0000	0.0000			0.0000	0.0000									
Total		**0.0000**	**0.0000**	**0.0000**			**0.0000**	**0.0000**									

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Residential	0	0.0000	0.0000	0.0000			0.0000	0.0000									
Total		**0.0000**	**0.0000**	**0.0000**			**0.0000**	**0.0000**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
User Defined Residential	0					
Total						

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
User Defined Residential	0					
Total						

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0630	1.3100e-003	0.0849			0.0109	0.0109									
Unmitigated	0.0630	1.3100e-003	0.0849			0.0109	0.0109									

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000									
Consumer Products	0.0000					0.0000	0.0000									
Hearth	0.0628	1.2300e-003	0.0775			0.0109	0.0109									
Landscaping	2.2000e-004	9.0000e-005	7.4200e-003			4.0000e-005	4.0000e-005									
Total	**0.0630**	**1.3200e-003**	**0.0849**			**0.0109**	**0.0109**									

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000									
Consumer Products	0.0000					0.0000	0.0000									
Hearth	0.0628	1.2300e-003	0.0775			0.0109	0.0109									
Landscaping	2.2000e-004	9.0000e-005	7.4200e-003			4.0000e-005	4.0000e-005									
Total	**0.0630**	**1.3200e-003**	**0.0849**			**0.0109**	**0.0109**									

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated					

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
User Defined Residential	0 / 0					
Total						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
User Defined Residential	0 / 0					
Total						

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated					
Unmitigated					

Lower Bear Creek Habitat Enhancement - South Coast Air Basin, Annual

Exhibit 4: SCMND

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
User Defined Residential	0					
Total						

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
User Defined Residential	0					
Total						

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix D – Lower Bear Creek Slough Channel Enhancement Background Report

MATTOLE SALMON GROUP

Lower Bear Creek Slough Enhancement Project

(*Lighthouse Road Improvement*)

Regulatory Background Report

Prepared by
Aldaron Laird
Environmental Planner
Greenway Partners

March 2022

Contents

Proposed Project

The Mattole Salmon Group's (MSG) proposed project (Alternative D design) involves enhancing off-channel habitat for over-wintering salmonids, maintaining access to private property, and public access to the coast via Lighthouse Road by reducing flooding in the project reach from Bear Creek. The project involves the diversion of Bear Creek's discharge to augment flow to Dogleg Pool and Middle Slough in the Mattole River estuary. The project will also relocate a private access road/driveway to accommodate the diversion of Bear Creek (Figure 1).

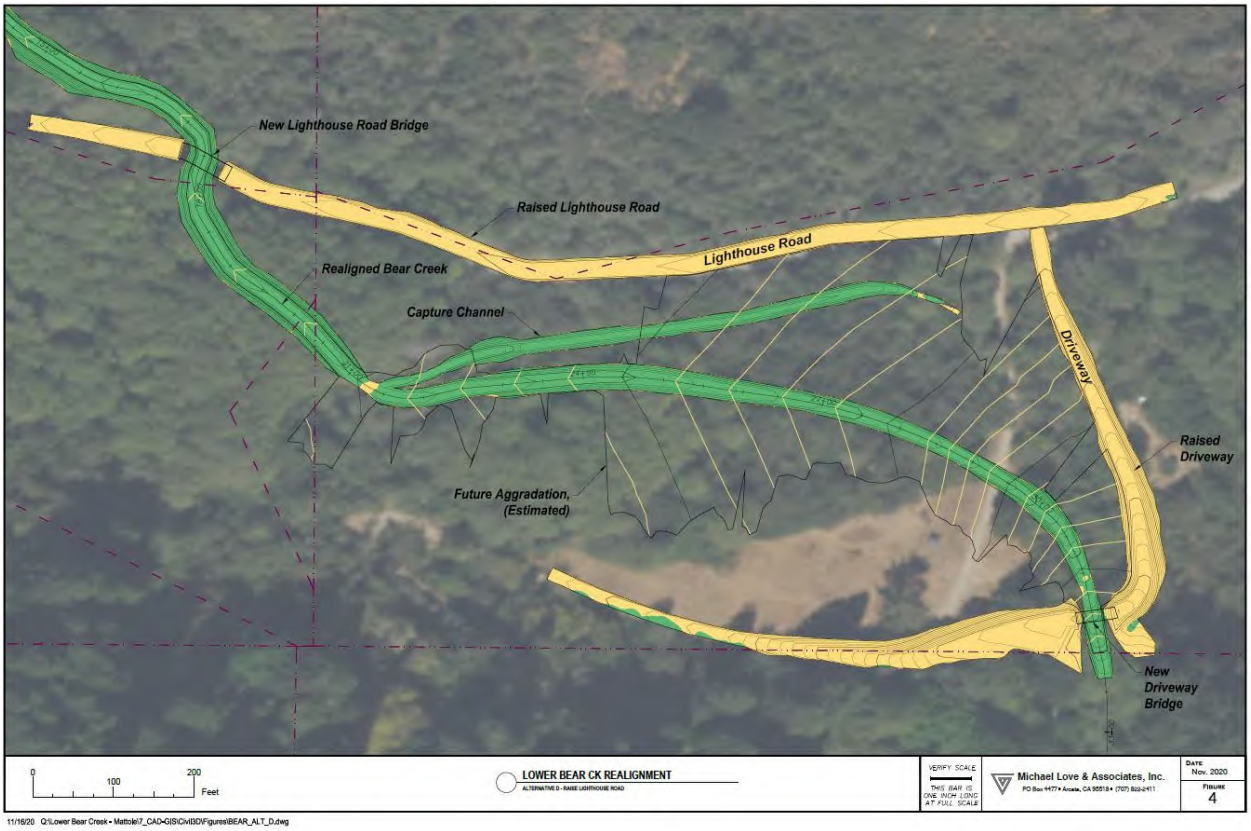

Figure 1. Proposed Bear Creek Slough Enhancement Project (Alternative D).

All areas that will be disturbed while building this project will be cleared of vegetation. A segment of an existing private access road/driveway will be raised in elevation and a new segment located to the east of Bear Creek requiring the installation of a bridge over the stream channel. Bear Creek as it exits steep upland topography will be diverted to traverse three private parcels, cross Lighthouse Road, traverse BLM property connecting to Dogleg Pool and discharging to Middle Slough in the Mattole River estuary. A secondary channel to Bear Creek will be constructed parallel to and south of Lighthouse Road. A bridge will be installed for the new Bear Creek stream crossing on Lighthouse Road, and an existing stream crossing on Lighthouse Road to the west of the new channel crossing will be replaced. Lighthouse Road in the project reach will be elevated three feet to reduce flooding from Bear Creek. Disturbed areas will be planted with appropriate vegetation.

Proposed Project Actions:

Private Property

- Limit vegetation clearing and construction activities to September 1 through February 28,
- Install and routinely check a fish screen capable of precluding movement of aquatic amphibians and fish into the active areas of excavation or soil disturbance,
- Have a qualified biologist survey any portion of the wetted channel prior to the start of disturbance activities to detect and re-locate any amphibians of conservation concern,
- Clear Riparian vegetation from excavation/fill and grading areas,
- Dewater areas to receive fill,
- Isolate work areas and install erosion control measures,
- Excavate/grade and construct new Bear Creek channel,
- Excavate and grade a secondary flow capture channel,
- Divert Bear Creek flows into the new channel,
- Raise elevation of a portion of an existing access road/drive, construct a new segment of the access road/driveway, and construct a bridge over Bear Creek,
- Raise Lighthouse Road a minimum of three feet,
- Use excess excavated material to fill and grade non-wetland open area west of existing access road/driveway,
- Revegetate disturbed areas,
- Post-construction enhancement monitoring plan documenting achievement of project goals, objectives, and performance standards.

Federal Property

- Limit vegetation clearing and construction activities to September 1 through February 28,
- Install and routinely check a fish screen capable of precluding movement of aquatic amphibians and fish into the active areas of excavation or soil disturbance,
- Have a qualified biologist survey any portion of the wetted channel prior to the start of disturbance activities to detect and re-locate any amphibians of conservation concern,
- Clear Riparian vegetation from excavation/fill and grading areas,
- Dewater areas to receive fill,
- Isolate work areas and install erosion control measures,
- Excavate/grade and construct new Bear Creek channel,
- Divert Bear Creek flows into Dogleg Pool and Middle Slough,
- Construct a bridge as a new stream crossing for the relocated Bear Creek on Lighthouse Road,
- Replace and enlarge an existing stream crossing on an un-named tributary on Lighthouse Road,
- Raise Lighthouse Road a minimum of 3 feet,
- Revegetate disturbed areas.

- Post-construction enhancement monitoring plan documenting achievement of project goals, objectives, and performance standards.

Regulatory Review

Regulatory Compliance Issues:

The lower Bear Creek Slough enhancement project involves private property, County right-of-way, and federal property. Permit conditions of approval run with the land, for example stream crossings (culvert) maintenance is the Permittee's (landowner) responsibility. Regulatory compliance on private property is the most inclusive of applicable regulatory statutes and on federal property the least encumbered as local and state statutes do not apply. It may be necessary to proceed on two parallel regulatory compliance tracks, for actions on: 1) private property, and 2) federal property (Figure 2).

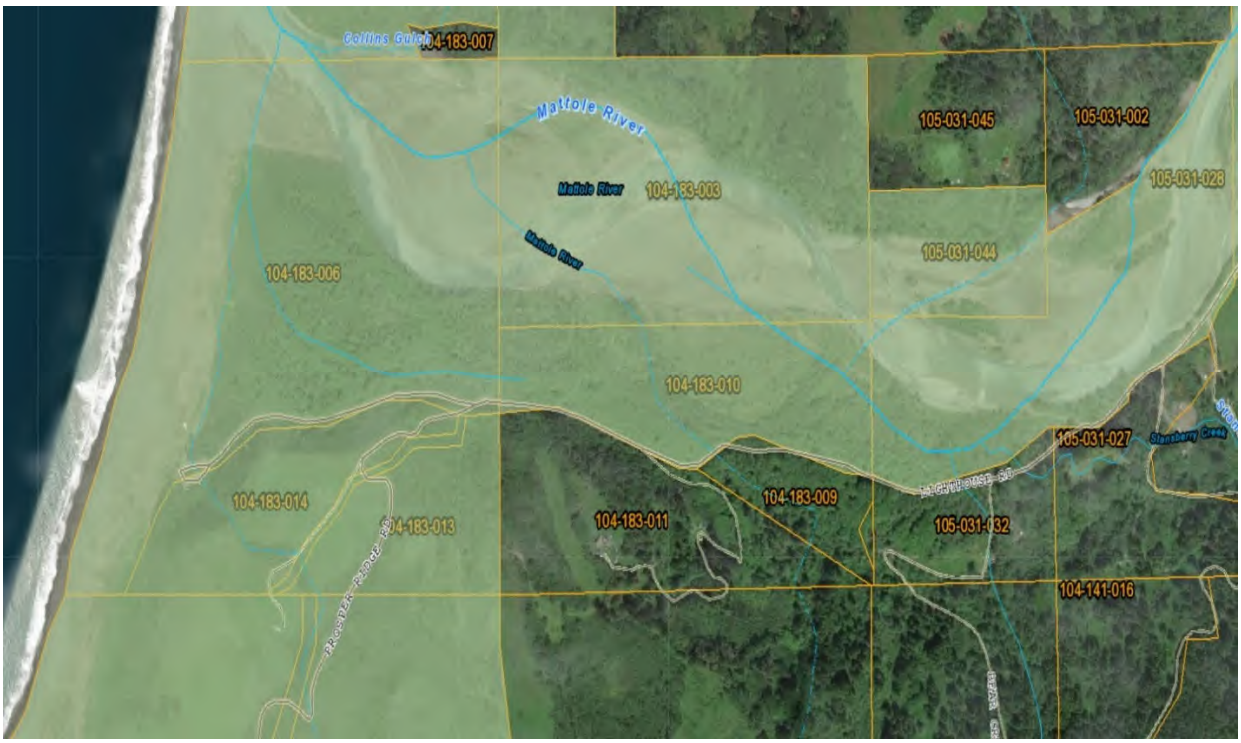

Figure 2. Humboldt County assessor parcels and public (shaded) and private lands on lower Mattole River.

In 2005, the Bureau of Land Management received Coastal Commission concurrence of its Resource Management Plans' consistency determination (CD). BLM's aquatic habitat improvement projects in the lower Mattole River and estuary, including its Middle Slough activities are like work described in its previous CD and negative determinations (ND). The MSG's proposed Bear Creek enhancement project activities on BLM property may also be able to be covered by BLMs previous CD and ND. BLM also secured a Nationwide Permit (NWP 27) from the U.S. Army Corps of Engineers for its aquatic

habitat improvement projects in the lower Mattole River and estuary. It may be possible to cover the proposed Bear Creek enhancement project activities on BLM property if BLM's NWP is still in force, similarly for BLMs Water Quality Certification from the North Coast Regional Water Quality Control Board, and the National Marine Fisheries Service's not likely to adversely affect determination for coho salmon, chinook salmon, and steelhead trout.

Conversion of protected water types is allowed but the "no-net" loss of waters of the state and U.S. will apply. Nearly the entire project footprint is within "state retained" jurisdiction (Coastal Commission), therefore project approval is subject to compliance with policies/regulations in Chapter 3 of the California Coastal Act (Figure 3). The Commission's approval of nearly all the proposed project's actions is crucial, as is the California Department of Fish and Wildlife, and U.S. Army Corps of Engineers

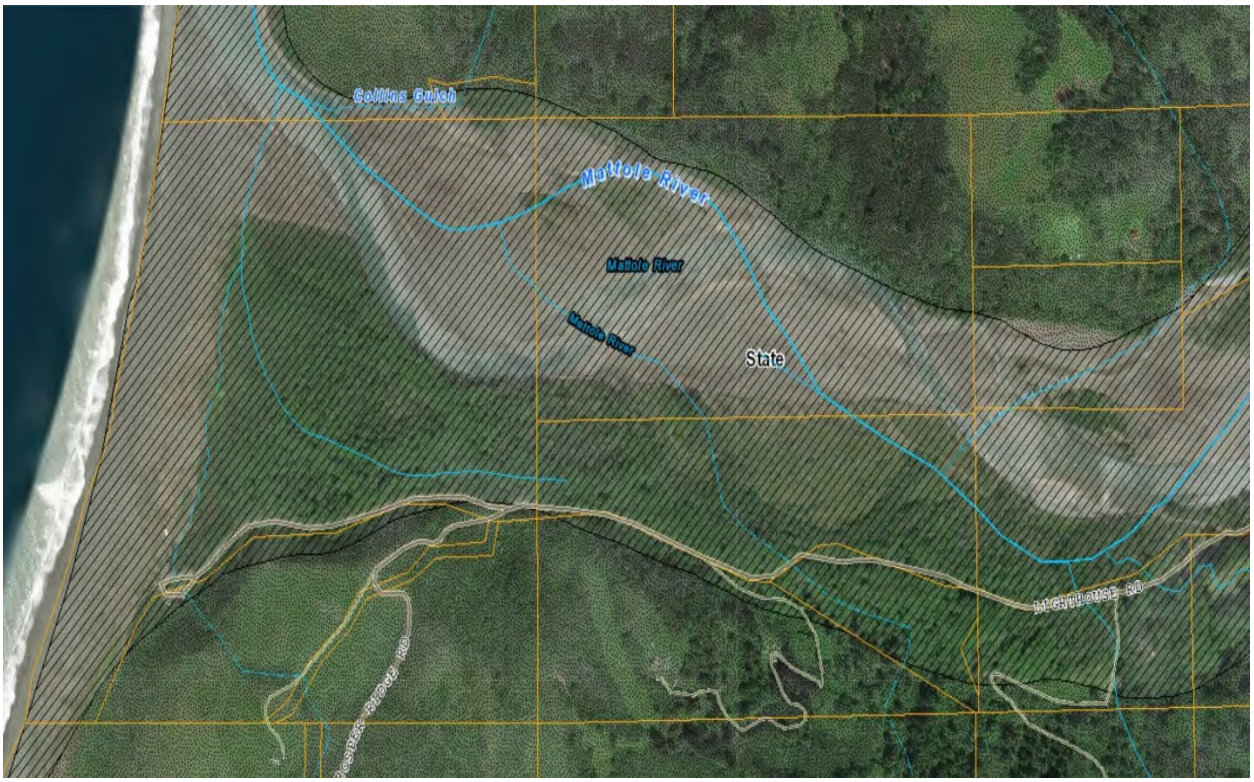

Figure 3. California Coastal Act state retained jurisdiction areas (shaded).

Regulatory Jurisdictions:

Local:

- Humboldt County:
  - Public Works Department-proposed actions in County right-of-way, may require an encroachment permit.
  - Planning Department-proposed actions in Agricultural Exclusive Zone will require a Conditional Use Permit with special consideration likely for

proposed actions in the area designated Prime Agricultural Soils; a Coastal Development Permit for activities outside of state retained jurisdiction on private property; and a Special Permit in Stream Management Areas.
- Building Department-Floodplain Development Certification for activities in FEMA's 100-year Flood Zone. *[Does this apply on Federal land?]*

State:

- Coastal Commission:

Activities on private property in state retained jurisdiction areas will require a Coastal Development Permit (CDP) from the Coastal Commission, and on federal property Commission concurrence with a Consistency Determination or Negative Determination. Activities on private property outside of the state retained jurisdiction in the County's Local Coastal Program jurisdiction will require a CDP from the County unless the County agrees to consolidate the CDP with the Commission's issuance of a single CDP for both jurisdictions.

Staging and stockpiling areas shall be at least 150 feet from coastal waters, drainage courses, and all wetlands. The proposed design will need to comply with the following sections in Chapter 3:

- *Section 30231 Biological Productivity:*
  The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.
- *Section 30233 Diking, Filling or Dredging Wetlands:*
  (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
  (6) Restoration purposes.
- Section 30241 Prime Agricultural Land; Maintenance in Agricultural Production:
  The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy…

- State Lands Commission:
  - A lease may be required, if the County does not have one for activities in their right-of-way on Lighthouse Road if they are located on State Sovereign lands. A boundary study may be required, if one has not

already been prepared, to determine if State Sovereign Lands are involved in the area selected for construction of a bridge on Lighthouse Road. *[Does this apply on Federal land?]*

- Department of Fish and Wildlife:

Activities will likely be limited to protect aquatic and riparian species between July 1 or possibly August 31 (without nesting survey) and October 31.

  - Streambed Alteration Agreement possible covered activities:
    [Private property and County right-of-way]
    - Clear Riparian and/or wetland vegetation for the new Bear Creek and capture channels, stream crossings, and placement of road fill.
    - Survey for fish, amphibian and reptile and relocation prior to dewatering.
    - Dewater open water/emergent wetlands/groundwater in construction areas.
    - Excavate/grade and construct Bear Creek Debris Berms in Bear Creek.
    - Excavate/grade new Bear Creek and capture channels through riparian and wetlands to Dogleg Pool.
    - Place fill/grade on an existing section of a private access driveway/road and construct a new section road in possible riparian/wetlands areas.
    - Construct a bridge across Bear Creek on private driveway/access road.
    - Place fill/grade and increase elevation of Lighthouse Road.
    - Excavate/grade/construct new bridge on Lighthouse Road.
    - Replace existing stream crossing on Lighthouse Road.
    - Divert Bear Creek flows to Dogleg Pool and Middle Slough.
  - Restoration Management Permit: Only required if a take of a state covered species is likely, possible covered activities:
    [Private property and County right-of-way]
    - Clearing Riparian and/or wetland vegetation for the new Bear Creek and capture channels, stream crossings, and placement of road fill.
    - Aquatic species relocation.
    - Dewatering open water/emergent wetlands/groundwater in construction areas.
    - Augment freshwater inflow to Dogleg Pool and Middle Slough.
- North Coast Regional Water Quality Control Board
  - Water Quality Certification, possible covered activities:
    - BMPs for erosion, sediment, and turbidity control shall be implemented and in place at commencement of, during, and after any ground clearing activities or any other project activities that could result in erosion or sediment discharges to surface water.
    - Clear Riparian and/or wetland vegetation for the new Bear Creek and capture channels, stream crossings, and placement of road fill.

- Dewater open water/emergent wetlands/groundwater in construction areas.
- Excavate/grade and construct Bear Creek Debris Berms in Bear Creek.
- Excavate/grade new Bear Creek and capture channels through riparian and wetlands to Dogleg Pool.
- Place fill/grade on an existing section of a private access driveway/road and construct a new section road in possible riparian/wetlands areas.
- Construct a bridge across Bear Creek on private driveway/access road.
- Place fill/grade and increase elevation of Lighthouse Road.
- Excavate/grade/construct new bridge on Lighthouse Road.
- Replace existing stream crossing on Lighthouse Road.
- Divert Bear Creek flows to Dogleg Pool and Middle Slough.

Federal:

- US Army Corps of Engineers:
  - Nationwide Permits: Proposed project activities would likely qualify for authorization under NWP 3 Maintenance (Lighthouse Road and private access road activities) and NWP 27 Aquatic Habitat Restoration and Enhancement (Bear Creek diversion, channel excavation/grading, stream crossings, road flood protection, and revegetation).
- US Fish and Wildlife Service
  - Endangered Species Act Section 7 Consultation
  - Biological Opinion-Incidental Take Permit
    - The project will clear Riparian and wetland vegetation and divert/dewater an existing stream channel, increase flows to Dogleg Pool and Middle Slough potentially involving disturbance/displacement/relocation of: Willow Flycatcher, Western Pond Turtles, Yellow-Legged Frog, and lamprey, and possibly protected plant species.
- National Marine Fisheries Service
  - ESA Section 7 and Essential Fish Habitat Consultation
  - Biological Opinion-Incidental Take Permit and Conservation Measures
    - The project will clear Riparian and wetland vegetation and divert/dewater an existing stream channel, increase flows to Dogleg Pool and Middle Slough potentially involving disturbance/displacement/relocation of salmonids.

Environmental Setting

Vegetation

Special Status Plant Survey Results Lower Bear Creek Slough Enhancement Project (Lighthouse Road Improvement) (Jen Kalt 2021).

Potential Regulatory Issues:

1. Vegetation types in regions of the state that are already classified, or types with basic levels of identification have been assigned Global and State Rankings based on the NatureServe's Network Core Methodology (2021). Projects with the potential to impact rare types (S1-S3) are required to prepare an Environmental Impact Report by CEQA Guidelines Section 15065(a)(1), since they may have a significant effect on the environment.
2. There is one S3 vegetation type in the project's area of potential effects: The plant association characterized as *Alnus rubra / Salix lasiolepis / Rubus* spp. (Sawyer et al. 2009). This plant association type dominates the majority of the project footprint. Although the Red Alder Forest Alliance is not ranked as rare, all of the associations in this alliance are classified as S3 (VegCAMP, 2021). Reduction in spatial extent of plant association characterized as *Alnus rubra / Salix lasiolepis / Rubus* spp., may necessitate mitigation at a minimum of 1:1 ratio.

No Special Status plants encountered within the project area. The project area is dominated by a Special Status Natural Community (*Alnus rubra / Salix lasiolepis/ Rubus* spp. (Sawyer et al. 2009) which is ranked S3 on the VegCAMP State rarity ranking (2021).

The project is located on the Petrolia USGS quadrangle in the Mattole River watershed along Lighthouse Road in Petrolia, Humboldt County, California on private parcels adjacent to the County right-of-way along Lighthouse Road. The elevation of the project site ranges from approximately 20 to 160 feet above mean sea level. The project site includes Lower Bear Creek, its current and former streambed and streambanks, the County road and private driveways, and areas for stockpiling spoils. Vegetation within the project site are best described as *Alnus rubra* (red alder) Forest, Bigleaf Maple Forest, and Wild Oats and Annual Brome Grasslands (Sawyer et al. 2009; Appendix B). The majority of the project site is occupied by vegetation in the *Alnus rubra* (red alder) Forest Alliance (Sawyer et al. 2009) and is dominated by even-aged stands of red alder with willows and scattered black cottonwoods (Figure 1).

Figure 1. *Alnus rubra* (red alder) Forest Alliance occupies the majority of the project site.

The tree canopy in this area is continuous and is dominated by even-aged stands of red alder with willows and scattered large black cottonwoods. Areas immediately adjacent to Lighthouse Road and the private driveway are dominated by stinging nettle, cow parsnip, and poison hemlock, with a variety of non-native grasses and herbaceous plants.

The shrub layer is sparse to intermittent, and is dominated by California blackberry, thimbleberry, and large patches of slough sedge in depressions that retain water throughout much of the year. The herbaceous layer is open to continuous, and is dominated by stinging nettle, slough sedge, and ferns. The plant association is best characterized as *Alnus rubra / Salix lasiolepis / Rubus* spp. (Figure 2).

Figure 2. The understory within the majority of the project site is dominated by California blackberry, thimbleberry, and large patches of slough sedge.

Upstream from the disturbed area associated with the residence and driveway, a narrow riparian area along the banks of Bear Creek supports red alder, bigleaf maple, California bay, and willow (cover photo). This vegetation type best described as Bigleaf Maple Forest (Sawyer et al. 2009).

The landscape upslope and adjacent to the project site is dominated by the *Pseudotsuga menziesii* (Douglas-fir) Forest & Woodland Alliance (Sawyer et al. 2009). Vegetation types within the project site are show in Appendix B.

Appendix B. Map of vegetation types within the Lower Bear Creek Slough Enhancement Project site.

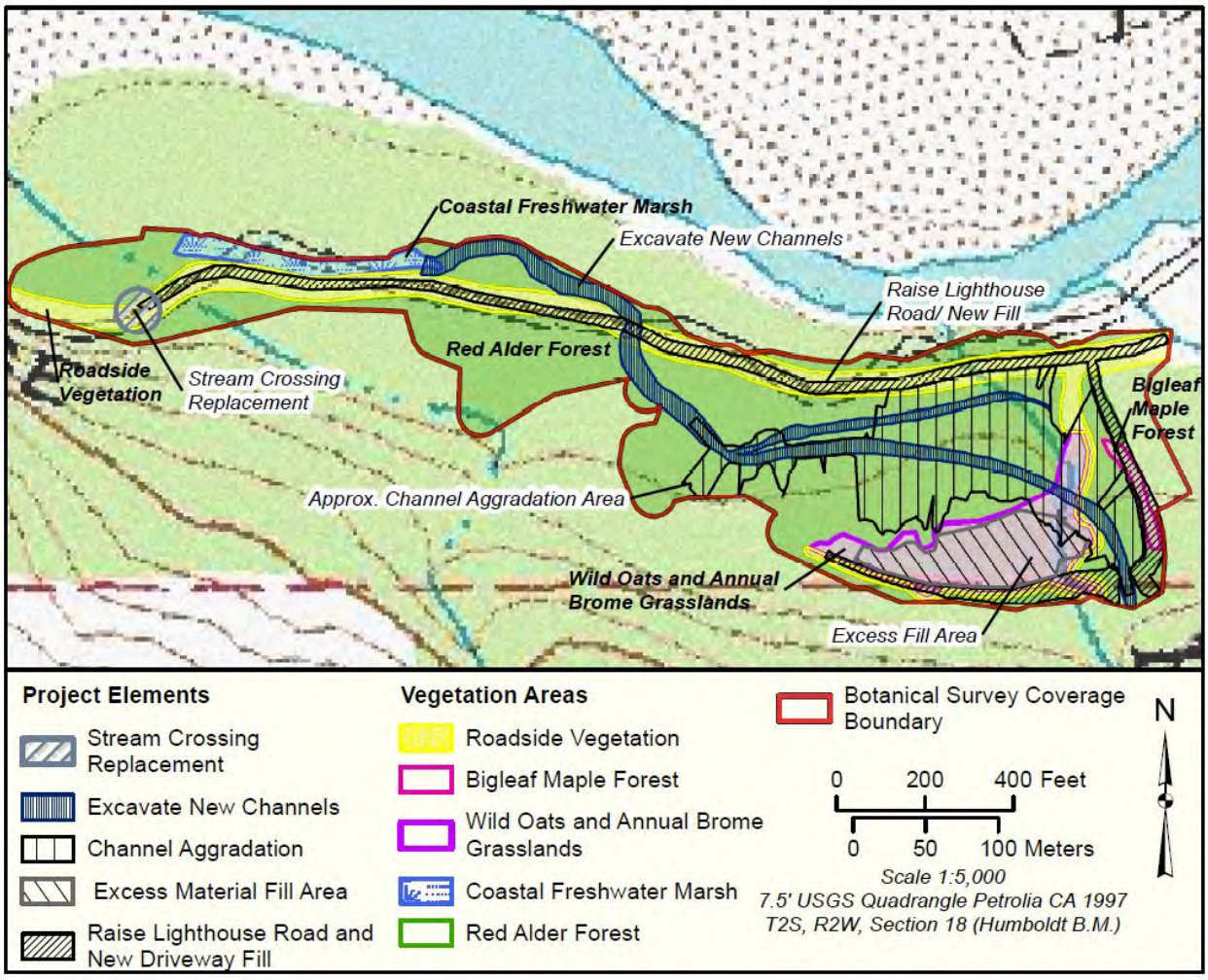

Figure 3. Disturbed flat west of the private driveway.

A disturbed flat west of the private driveway is dominated by grasses and Italian thistle (Figure 3). This vegetation type is best described as Wild Oats and Annual Brome Grasslands (Sawyer et al. 2009)

Vegetation types in regions of the state that are already classified, or types with basic levels of identification have been assigned Global and State Rankings based on the NatureServe's Network Core Methodology (2021). Projects with the potential to impact rare types (S1-S3) are required to prepare an Environmental Impact Report by CEQA Guidelines Section 15065(a)(1), since they may have a significant effect on the environment.

There is one S3 vegetation type in the project's area of potential effects: The plant association characterized as *Alnus rubra / Salix lasiolepis / Rubus* spp. (Sawyer et al. 2009). This plant association type dominates the majority of the project footprint. Although the Red Alder Forest Alliance is not ranked as rare, all of the associations in this alliance are classified as S3 (VegCAMP, 2021).

Although temporary impacts will likely occur as a result of project activities, the project will enhance habitat by creating off-channel salmonid habitat, restoring a more natural hydrologic channel, replacing a road culvert, and replanting disturbed areas with native vegetation.

No further botanical surveys are recommended prior to project activities unless the project footprint is expanded or modified.

Wildlife

Biological Scoping Report for Channel Restoration on Lower Bear Creek (Keith Slauson 2021)

Potential Regulatory Issues:

1. Impacting aquatic amphibian species in the wetted channel and adjacent areas with cover objects (logs, large cobble/rocks) and damp soil underneath.
2. Avoid conducting all activities that will result in the removal of modification of vegetation or generate substantial noise to outside the spotted owl (1 March to 31 August) and passerine bird (1 May to 15 August) nesting seasons avoid impacts to native nesting birds.
3. No pesticides, herbicides, or rodenticides can be used at any time during the development of or during ongoing operations of the proposed project.
4. Pre-project disturbance surveys may be required.

The proposed restoration project consists of re-routing the portion of the Bear Creek channel that approaches and crosses the road to connect it to a historical slough channel on the river side of the road. The project also includes raising the elevation of the road prism to reduce the likelihood for flooding over the roadway (Figure 2). The project parcels lies on a north facing slope and is mainly riparian forest dominated by Red alder (*Alnus rubra*) and willow (*Salix* sp.).

Figure 2. Existing location of lower Bear Creek channel and proposed restoration project for the re-alignment of lower Bear Creek channel and adjacent private roadway; located 3.5 miles southwest of Petrolia, Humboldt County, California.

Species addressed in this assessment include all animal and plant species legally protected pursuant to the California and Federal Endangered Species Acts (CESA and FESA, respectively), California's "Fully Protected Species" statutes (California Department of Fish and Game (CDFG) codes 3503.5, 3505, 3511, 4700, 5050 and 5515), and the California Environmental Quality Act (CEQA). This assessment utilizes three elements: 1) queries of state and federal agency databases for species occurrence in the biological assessment area for the proposed project 2) an assessment of current habitat conditions to support species of conservation concern in the biological assessment area for the proposed project and 3) a site visit to the existing project area to evaluate habitat conditions and detect species present during the site visit. The California Natural Diversity Database (CNDDB), the Biogeographic Information Observation System (BIOS), and the northern spotted owl database (Gould 1997) for the project region were queried for the occurrence of species of conservation concern in the proposed project region. The proposed project region is defined as the 9-quadrangle area centered on the Arcata north quadrangle and also includes: Cape Mendocino, Capetown, Taylor Peak, Petrolia, Buckeye Mtn., Bull Cr., Cooksie Creek, Shrubrick Peak and Honeydew. The CNDDB and BIOS were queried in May of 2021, and a current official list of federally threatened, endangered, or candidate species for the proposed project region was obtained in May of 2021. Finally, this assessment also considered any other species listed on the California Department of Wildlife's (CDFW) special animals list (CDFW 2019) that are known to occur in the project region, based on additional literature and/or habitat

conditions, that were not identified by during the database queries. All species of conservation concern identified in these queries, habitat assessments, and during site visits are included in Appendix 1. I visited the proposed project site and evaluated the habitat conditions for terrestrial and aquatic wildlife species on four occasions from 21st of June through the 16th of August 2020 (Figures 2).

CNDDB Database Query—A total of 27 animal species of conservation concern were identified in the CNDDB database query. The animal species included 5 species of amphibian, 6 species of birds, 1 species of insect, 8 mammals, 1 mollusk, 4 species/runs of fish, and 1 reptile (Table 1). Thirteen additional bird species were considered based on their known occurrence in the existing project area (Table 1; Hunter et al. 2005). Five additional mammal species were also considered based on their potential occurrence in the proposed project area. Fifteen animal species of conservation concern were considered to have the potential for negative effects from the existing project activities (Table 1). Seven aquatic species, including 4 amphibians and 4 fish species/stocks, have the potential for direct effects of working in the channel while they are present and/or indirect effects of sedimentation of habitat for one or more life stages (Table 1). Four species of raptors have the potential for negative effects due to the presence of suitable nesting habitat within the proposed project area (Table 1). Four riparian habitat associated birds, including the western yellow-billed cuckoo and willow flycatcher, have the potential to be negatively affected due to the presence of suitable habitat within the proposed project area.

Recommended Biological Surveys Conditional for Project Approval

1. One-year protocol level surveys for Willow flycatcher to determine occupancy status and presence of any activity centers within 300 feet of proposed project site.

2. One-year protocol level surveys for Western yellow-billed cuckoo to determine occupancy status and presence of any activity centers within 300 feet of proposed project site.

3. Concurrent with flycatcher and cuckoo surveys, conduct spot mapping for any sensitive riparian nesting species, including yellow-breasted chat and yellow warbler, to determine potential nest locations with the proposed project area.

4. Search for any hawk or owl nests within 300 feet of the proposed project area.

5. Survey the areas with suitable habitat for sensitive amphibians to determine occupancy within the project footprint.

Results of Recommended Surveys

Willow Flycatcher—Two protocol surveys were conducted on the 21st of June (survey period 2) and the 12th of July (survey period 3) in 2020. No Willow flycatchers were detected during these surveys.

Western Yellow-billed Cuckoo—Four protocol surveys were conducted on the 21st of June, 12th and 26th of July, and the 16th of August in 2020. No cuckoos were detected during these surveys.

Foothill Yellow-legged Frog—Visual encounter surveys along the wetted channel above the road during the July and August 2020 bird surveys resulted in the detection of multiple adults. This suggests that lower Bear Creek likely supports wintering and seasonal migration habitat for these frogs to move into and out of the Mattole River for the breeding season.

Pacific Tailed Frog—Surveys further up lower Bear Creek for occupancy of trailed frogs was hampered on both survey occasions in 2020 due to the presence of several loose dogs who approached the surveyor and acted aggressively. Fortunately, the presence of this species further up the creek channel had been confirmed from other individuals that had surveyed the area previously. This suggests that lower Bear Creek supports tailed frogs and is likely a breeding location.

Recommended Avoidance, Minimization and Mitigations Measures Conditional for Project Approval

1. Minimize the potential for impacting aquatic amphibian species in the wetted channel and adjacent areas with cover objects (logs, large cobble/rocks) and damp soil underneath.

    A. Implement a fish screen capable of precluding movement of aquatic amphibians and fish into the active areas of excavation or soil disturbance on the Bear Creek channel. Routinely check the screen throughout the duration of the project to ensure proper function.

    B. Have a qualified biologist survey any portion of the wetted channel prior to the start of disturbance activities to detect and re-locate any amphibians of conservation concern. Specifically search suitable habitats for the presence of adult or larval tailed frogs, southern torrent salamanders, foothill yellow-legger frogs, and northern red-legged frogs where disturbance will occur.

2. Avoid conducting all activities that will result in the removal of modification of vegetation or generate substantial noise to outside the spotted owl (1 March to 31 August) and passerine bird (1 May to 15 August) nesting seasons avoid impacts to native nesting birds.

3. Avoid conducting all activities within wetted channels during the wet season when they have the potential to impact one or more fish species of conservation concern.

4. Minimize the potential for sediment run off into Bear Creek and the Mattole River from on-site erosion by implementing or improving best management practices for all channel, road prism alternation, or any ongoing maintenance needed to support the proposed project.

5. No pesticides, herbicides, or rodenticides can be used at any time during the development of or during ongoing operations of the proposed project.

6. Re-vegetate all areas with a similar composition of native plants. Eradicate all invasive non-native plant species that become established after any or all restoration activities in the proposed project area.

Plan and Budget for Monitoring During Proposed Project Activities

Fish and Amphibian Screen-A qualified biologist or qualified project partner will install a fish screen up-channel from the portion of Bear creek where the wetted channel will be impacted by the proposed project activities. After installation, all downstream habitat should be searched to re-locate any species life stages dependent on flowing water upstream of the screen or to other suitable habitats. The fish screen should be check at a minimum of 2 times per week to ensure proper function by a qualified biologist. Installation of the fish screen and post install downstream surveys will likely require a maximum of one 10-hour day of a qualified biologist's time.

Pre-disturbance Amphibian Surveys-During any phase of the project where wetted channel, adjacent moist channel-side habitats or other habitats capable of supporting any of the 4 amphibian species of concern identified in Table 1, will be disturbed and amphibians present could be adversely impacted a qualified biologist will need to conduct surveys to detect and re-locate any and all amphibian species found. Re-location should occur higher up in Bear creek or to suitable habitats adjacent to the project area disturbance footprint. The initial first pre-disturbance amphibian survey should be done immediately prior to the start of habitat disturbance activities and will likely require 8-10 hours to be completely surveyed by a qualified biologist. This initial survey can be combined with the installation of the fish screen to be most cost effective. The frequency of the need to re-survey will depend on survey results, duration of disturbance activities, weather conditions post-survey that may influence amphibian movement, and the timing of foothill yellow-legged frog movements into Bear creek form the lower Mattole river. Single surveys at the start of each work week where disturbance activities will occur is recommended until the afore mentioned conditions can be evaluated and integrated into a fully informed plan.

Fisheries

Bear Creek and Dogleg Pool Fisheries and Habitat information (Nathan Queener, Mattole Salmon Group 2022)

Bear Creek

Bear Creek is currently not accessible to anadromous fish except during very rare extreme flow events, due to a lack of surface flow connection between the stream and the mainstem Mattole River. It is currently estimated that a Mattole River flow of at least

30,000 cfs (a ~1.5 yr recurrence flow) would be necessary to allow adult salmonids to enter the creek.

No surveys of Bear Creek for juvenile salmonids have been conducted since 2009, due to the low likelihood of fish entering the stream with the current channel configuration. From 2007-2009 snorkel surveys were conducted annually in May or June, and again in September. In May 2007 one juvenile steelhead was observed in Bear Creek upstream from Lighthouse Rd. Residents of the property through which the stream flows observed additional juvenile steelhead in a 200' reach of the stream in June and July. No fish were observed during any other surveys during this period.

Prior to 2007, there are anecdotal accounts of juvenile coho and steelhead in the Bear Creek channel, and the observation of a spawning adult coho salmon in 1993.

In its current configuration, there is a maximum 600' of channel upstream of Lighthouse Rd that offers potential spawning and rearing habitat, if flows were sufficient to allow fish access. Channel gradient ranges from 2-5%, and then steepens quickly at the upstream end to >10%, with multiple 3-4' channel steps that limit further upstream access. Current spawning habitat is very poor, with highly embedded, angular gravels. Rearing habitat is also poor due to a lack of pool depth, large woody cover, and the confined nature of the channel due to the stream being straightened and confined by levees multiple times between 1975 and the mid-1990s. In March of 2019 a large debris flow in a storm event aggraded the leveed channel, and caused the stream to avulse to the east, where it currently flows across a sparsely vegetated alluvial fan.

In 2007-2009 temperature probes were deployed in Bear Creek upstream from Lighthouse Rd during the summer months. Water temperatures were cool and suitable for salmon and steelhead, with a maximum week average temperature over the three summers of 14.4 degrees C.

Surface flow is perennial at the southern extent of this reach, where Bear Creek exits an inner gorge and flows over the upstream edge of the alluvial fan. Surface flow on the alluvial fan gradually retreats upstream during the spring and summer, and in dry years all but the upstream most ~100' of this channel has no surface flow by late summer.

Dogleg Pool

This ~500' long feature is immediately north of Lighthouse Rd, west and downstream of Bear Creek. Over the last decade, during some high flow periods the Dogleg is connected to the slough system downstream and the mainstem Mattole, but for most of the year the feature is an isolated pool, with maximum depths of 3-4' during the wet season, shrinking to <1' during the summer. Some surface water does remain in the Dogleg Pool throughout the summer.

This off-channel pool occupies a depression that was the main river channel in the 1970s and early 1980s. In the winter of 1982-83 the river thalweg migrated to the north, and this feature, as well as associated relict channels to the west provided off-channel/slough habitat at winter storm flows and when estuary/lagoon water levels were

high. The channel gradually became vegetated with alder and willow, and sediment deposition built up the alluvial terrace to the West, North, and East of the feature. By the mid-1990s the Dogleg Pool was isolated from the main river channel and inaccessible to fish except with bankfull or greater flood events, due to the effects of sediment deposition, and channel incision occurring as a result of the meter of uplift caused by the 1992 Cape Mendocino earthquakes.

In 2014 the first phase of excavation of the Middle Slough to the northwest of the Dogleg Pool greatly increased the hydrologic window under which fish were able to access the Dogleg Pool by removing a berm of sediment that had blocked fish access to the relict channel. Following this project in 2014 fish access to the Dogleg was possible at mainstem flows of approximately 6,500 cfs at the Petrolia gaging station, a 5% exceedance flow. Between fall of 2014 and early 2016 fish access to the Dogleg became possible under slightly lower flows as a greater amount of water from Bear Creek storm flows went west into the Dogleg in response to sediment deposition in the previous Bear Creek channel. From 2016 to February of 2019 surface flow was observed connecting the Dogleg to the Middle Slough at flows as low as 2500 cfs at the Petrolia gage, a 15% exceedance flow, although slightly higher flows would likely be necessary for upstream passage by juvenile fish to provide sufficient depth with suitable velocities.

In large storms in late February of 2019 debris flow deposition on the Bear Creek alluvial fan forced Bear Creek flow to the east, decreasing flow to the Dogleg and decreasing the period of connectivity with the Middle Slough and mainstem Mattole, again requiring flows of greater than 5,000-6,000 cfs

In the summer of 2020 Phase 3 of the Middle Slough excavation lowered the channel elevation between the Dogleg Pool and Middle Slough, again allowing for surface flow connection at Mattole River flows of ~2500 cfs.

Fish surveys have been conducted rarely in the Dogleg Pool due to the generally poor water clarity, due to algal growth and runoff from the graveled surface of Lighthouse Rd, and the brief hydroperiod during which it is connected to the mainstem Mattole. During nighttime snorkel surveys in February of 2016 a 1+ steelhead parr and 50 threespine stickleback were observed. In March of 2017 no fish were observed, although visibility was poor, <1 m. On 5/2/2019 an eDNA sample taken from the Dogleg Pool showed the presence of DNA from steelhead, indicating the presence of at least a single individual in the feature.

In 2020 and 2021 Red-legged frog tadpoles and threespine stickleback have been observed in the Dogleg Pool.

Below from Appendix F, North Coast Watershed Assessment Program Mattole River Watershed Synthesis Report, 2003:

Table 37. Summary of available stream data in the Western Subbasin other than 1990s CDFG stream surveys.

Comments are taken from the various data sources. 1990s CDFG Stream Surveys are summarized in the Condensed Tributary Reports Section of the CDFG Appendix.

Tributary	Source	Date	General Comments	Fish Comments	Habitat Comments	Barrier Comments	Management Recommendations
(Lower) Bear Creek	Coastal Headwaters Association Survey	1981-1983	In late July 1982, creek dry below Lighthouse road culvert	During survey, few fry and yearling steelhead trout noted; One coho salmon fry positively identified through minnow trapping; Historically supported small runs of coho salmon and steelhead trout; According to one long-term resident, Chinook salmon not known to utilize Bear Creek for spawning	Spawning potential fair; Rearing habitat limited	Culvert not a passage problem at high water; 12ft high falls/cascade 0.4 miles upstream from mouth	

Text below from 2005 Mattole Watershed Plan:

Bear Creek

Bear Creek is part of a complex of cold seeps, springs and small streams that flow from the south valley wall. These water sources maintain temperatures in the 58 to 64 degree range and flow into a well-covered channel along the south bank. In August of 2004, there were pools of 58° standing water in these channels (MSG 2004). At present, the seeps no longer connect to Bear Creek and the result is insufficient summer volume to maintain connectivity to the mainstem.

Bear Creek is closest to the ocean of the south bank fish-bearing tributaries in the Mattole. In 1975, a landowner diverted it to run directly to the then mainstem channel in order to convert riparian alder forest to pasture. Instead of following

its former 2,000-foot channel along the south valley wall into the "South Slough," Bear Creek now runs directly north and under Lighthouse Road, emerging onto the floodplain terrace. Here, vast sediment deposits have raised elevations such that the stream assumes a different meander during every major storm. At this writing, it runs in the dirt track that vehicles use to reach the eastern end of the estuarine area. Coho have been observed spawning in Bear Creek as recently as 1993. Steelhead still spawn in the short reach between the culvert at Lighthouse Road and the beginning of the steep gorge.

Lower Bear Creek Project Summary

Mattole Salmon Group

June 3, 2021

Bear Creek is a small (<1 sq mile drainage area) tributary flowing into the Mattole River just upstream of the Mattole estuary. This stream is often referred to as Lower Bear Creek to differentiate it from the much larger Mattole tributary near Ettersburg. It drains forested north-facing hillslopes, and exits a steep inner gorge onto the historical floodplain of the Mattole River 500' south of the current location of Lighthouse Road.

Historically, the route of Bear Creek and the Mattole River across the river's floodplain changed with winter storm flows. This process of channel migration created a mosaic of side channels and wetlands, and is thought to have provided high-quality rearing habitat for juvenile salmon and steelhead in these channels and at the upper limit of tidal influence in the Mattole estuary. With the establishment of Lighthouse Road as a year-round thoroughfare this channel migration ceased. In the 1970s a straight channel was excavated from where Bear Creek leaves the canyon straight north to a culvert under Lighthouse Road. In the subsequent decades multiple landowners and the County used heavy equipment to keep Bear Creek flowing in this channel, which offered little habitat for salmon and steelhead, and was typically connected to the river only in high flow events. With greater scrutiny from regulatory agencies in the past several decades this channel clearance ceased, and the excavated channel and culvert gradually filled in with sediment, with increasing amounts of stormflow from Bear Creek flowing spilling out of the channel and flowing both east and west. In the spring of 2019, a large flow event completely filled this excavated channel and this deposition pushed the main course of Bear Creek to the East, where most of the flow sinks into the forested floodplain. Only during winter stormflows is there a surface flow connection to the river, in multiple locations over Lighthouse Road.

The current configuration of Bear Creek has little benefit for native fish and amphibians, and also results in frequent flooding of Lighthouse Road that impedes vehicle passage and threatens to erode and gully the road surface. The Mattole Salmon Group and project partners are currently engaged in a project to plan and design a channel route

for Bear Creek across the floodplain that enhances habitat for salmon and steelhead, improves landowner access to property and residences, and improves public safety and access along Lighthouse Road in the vicinity of Bear Creek.

Cultural

Cultural Resource Investigation Report for the Lower Bear Creek Slough Enhancement Project Petrolia, Humboldt County, California (Melinda Salisbury and James Roscoe, Roscoe and Associates (2021)

Potential Regulatory Issues:

1. If potential archaeological or paleontological resources are encountered during project subsurface construction activities or geotechnical testing, all work within 50 ft of the find shall be stopped, and a qualified archaeologist shall be contacted to evaluate the find, determine its significance, and identify any required mitigation. The applicant shall be responsible for implementing the mitigation prior to construction activities being re-started at the discovery site.
2. If project related geotechnical excavations become necessary, as a result of final design, and those excavations are to be more than one ft deep, then the THPOs of each local native American tribe, as noted above, will be contacted and given the date and time of excavations so that a cultural monitor may be present to observe for the presence of buried archaeological materials.

Confidential Information

This report contains confidential information. Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. Any information regarding the nature and location of archaeological sites should not be disclosed to unauthorized persons.

This information is exempt from the Freedom of Information Act pursuant to 16 U.S.C. 470w-3 (National Historic Preservation Act) and 16 U.S.C. § 470hh (Archaeological Resources Protection Act) and California State Government Code, Section 6254.10.

In 2020 and 2021, Roscoe and Associates (RA) conducted a cultural resources investigation of the Lower Bear Creek Slough Enhancement Project, currently proposed in southwestern Humboldt County, California. The project is located on both private property and lands administered by the Bureau of Land Management, and will be implemented along Bear Creek, near its confluence with the Mattole River, approximately 3.5 miles south-west of Petrolia. The project is being funded by a Fisheries Restoration Grant from the California Department of Fish and Wildlife.

Greenway Partners requested the investigation to assist the grantee, Mattole Salmon Group, in satisfying the environmental requirements specified in the California Environmental Quality Act (CEQA) and its guidelines with regard to historical and tribal cultural resources (California Public Resources Code (PRC) Section 21084.1, CA AB52 Chapter 532 (2014)) as well as the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470f), and its implementing regulations regarding historic properties. For the purposes of this document, the terms "project area" and "area of potential effect (APE)", will be used interchangeably.

In order to complete this investigation, RA conducted a review of regional archaeological and ethnogeographic literature, and historical maps; a project area record conducted by the California Historical Resources Information System's Northwest Information Center (NWIC) in Rohnert Park California; correspondence with local Native American tribal representatives; and a pedestrian field survey. The RA consultants who completed the investigation meet the Secretary of Interior's Professional Qualifications Standards for Archaeology (Title 36 Code of Federal Regulations Part 61, and 48 Federal Regulation 44716). James Roscoe, M.A., oversaw all aspects of the investigation. Derby McLaughlin assisted Mr. Roscoe with the field survey and Melinda Salisbury B.A. assisted with preparation of this report.

Regional ethno-geographic research indicates that the APE lies within the traditional territory of the Mattole People. Ethnographers of the southern Athabascans note that a seasonal round was followed; spending winters in their primary villages in the major river valleys and going into the hills in summer to hunt and gather seasonal plant foods. Spring and fall brought them to the major streams for the salmon runs. Elsasser (1978) notes that fish were the primary food resource for the Sinkyone and their neighbors, the Mattole. Indian Charlie, a Sinkyone informant for Goddard, provided a partial list of 42 villages on the Mattole River and the coast, which was synthesized by Baumhoff (1958). Known Mattole archaeological sites in the vicinity of the APE are generally located to the west, along the coastline.

The NWIC record search revealed that portions of the APE have been included in two previous cultural resource investigations, however no cultural resources were identified by these studies (S-042049| Rich et al. 2003, and S-051527| Roscoe and Raskin 2015. No resources have been found within the direct APE; two resources are present within 0.5 miles. The Mattole Lumber Company Wharf and Railroad (P-12- 001174) is documented 0.17 miles north of, and across the river from, the APE. This resource has reportedly been largely destroyed (Greenway 1997). The early 20$_{th}$-century Clark Barn (P-12-001173) is documented 0.30 miles north of the APE.

RA also requested information regarding previous archaeological research in the APE from the Bureau of Land Management, Arcata Field Office. On June 15, 2020, Archaeologist, Sharyl Kinnear-Ferris, MA, provided two documents for review. An Environmental Assessment (EA)/Initial Study (IS) for restoration projects at the mouth of the Mattole River (Ruddy 2018) and a Cultural Resources Report for the Lower Mattole River Projects (Kinnear-Ferris 2018). The Kinnear-Ferris 2018 study encompasses portions of the current APE and found that the previously documented Mattole Lumber

Company Wharf and Railroad (P-12-001174), no longer demonstrates physical integrity, likely as a result of being buried by huge mud slides during particularly large storm events. This site has been evaluated as not eligible to the NRHP.

Mr. Roscoe corresponded with Erika Cooper M.A., the Tribal Historic Preservation Officer (THPO) for the Bear River Band of Rohnerville Rancheria, throughout the investigation. On June 10, 2020, RA sent a letter to Ms. Cooper with the project map, and on June 11, Mr. Roscoe followed up with a phone call to discuss the status of the project and the negative findings of the field survey. Mr. Roscoe left a voice message and correspondence is ongoing, though no concerns regarding the project have arisen thus far.

Archaeologists, James Roscoe M.A. and associate Derby McLaughlin conducted a pedestrian field survey of the APE on May 21, May 22, and July 3, 2020 to identify and record resources that could be affected by implementation of the project. Nathan Queener, Salmonid Population Monitoring Coordinator for Mattole Salmon Group guided the surveyors to each location slated for restoration. Mr. Roscoe and Ms. McLaughlin surveyed a total of approximately 21.5 acres, covering the entire APE, and utilizing systematic parallel and zig-zag transect methods. Despite adequate survey conditions, no archaeological deposits buildings or structures that would qualify as historical or unique archeological resources (CEQA Guidelines Sections 15064.5 (a) and 21083.2 (g)) and no tribal cultural resources (in California Public Resources Code Section 21074), were identified within the proposed APE during this investigation. In addition, no historic properties were identified in the APE (NHPA of 1966, as amended (16 USC 470f), and it’s implementing regulations).

Appendix E – Basis of Design Report & 65% Design Plans

The Basis of Design Report and Design Plans were completed by Michael Love & Associates. Supporting work including the Geotechnical Investigation and Structure Selection memos from SHN are also found in this document. The entire file is rather large,105MB, and can be downloaded in its entirety from the following link:

www.h2odesigns.com/Mattole/LBC_Basis_of_Design_65prct.pdf